DECEMBER | 1957

products finishing

FINISHES AND PRODUCTS

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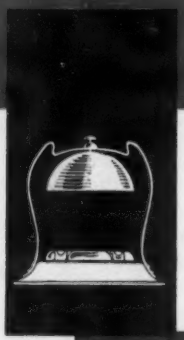
Beautiful *bells that sell...*

by BEVIN

BEVIN Fog Bell

The eye-appealing satin finish with LEA COMPOUNDS



BEVIN Rumpus Bell

Bevin Bros. Mfg. Co., East Hampton, Connecticut, have bee busy making BELLS with sales appeal for 125 years. And whe Bevin needs a Satin Finish, they specify a Lea Satin Finish. Le Compound has been busy in Bevin's finishing department for years If you are looking for a consumer appeal finish, a really moder finish, a true Satin Finish . . . specify LEA! Write or call us toda for more information . . . it's a better finish that actually costs les

Burring, Buffing, Polishing, Lapping, Plating and Spray Finishing . . . Manufacturers and Specialists in the Development of Production Methods, Equipment and Compositions. Manufacturers of Leo Compound and Learok . . . Industry's quality buffing and polishing compounds for over 30 years.

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Leo Mfg. Company of England, Ltd., Boston, England
Leo-Royal, Inc., Main Office and Laboratory: 139-20 109th Ave., Jamaica 35, N. Y.
Manufacturing Plant: 237 East Aurora St., Waterbury 20, Conn.

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1	17	33	49	65	81	97	113	129	145	301-2nd Cov.	330	346	362	378	394	410	426	442
2	18	34	50	66	82	98	114	130	146	302-3rd Cov.	331	347	363	379	395	411	427	443
3	19	35	51	67	83	99	115	131	147	303-4th Cov.	332	348	364	380	396	412	428	444
4	20	36	52	68	84	100	116	132	148	304	317	333	349	365	381	397	413	429	445
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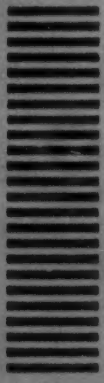

WHAT'S THE FASTEST WAY TO CLEAN METAL?
See page 11
WHAT'S THE MOST ECONOMICAL WAY?
See page 9
Some good things to know about Metal Cleaning

Oakite's FREE Booklet on Metal Cleaning

answers many questions that mean better production, more profit for you. Just look at the table of contents:

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Wheels coated with ALUNDUM abrasive give housing covers a fine polish, faster and for less money — like other Norton "Touch of Gold" grains that cover the widest range of polishing operations. ▶

Setting up the wheels shown at right is an easy job. The high capillarity of ALUNDUM polishing grains improves and speeds up the wetting process with glue or cement.

How polishing costs are being cut...NOW

Trend to wheels set up with ALUNDUM abrasive is spreading the money-saving "TOUCH OF GOLD"*

Many plants where polishing jobs are important find that a change-over to wheels set up with Norton ALUNDUM abrasives results in better, faster, lower-cost polishing.

In particular, preferences for S and R type grains are increasing rapidly. The S type, available in 14 to 90 grit sizes, is specially surface-treated to give the abrasive much greater adhesion to glue or cement. The R type, made in 100 to 240 grit sizes, also gets a special surface treatment, to improve its adhesiveness for use with glue only.

Typical advantages common to all ALUNDUM polishing grains include:

- **Uniform grain shape,** that assures a fast, uniform cutting action.
- **Uniform grain sizings,** with no oversize grains that mar the finish, no undersize grains to loaf on the job.
- **High capillarity,** assuring the easy absorption of adhesive that means longer lasting, better performing set-up wheels.

The booklet "Setting Up Metal Polishing Wheels and Belts" contains valuable facts on the various types of ALUNDUM grain . . . on the applications of canvas, leather or wooden wheels . . . and on the best means of preparing wheels, with cement or glue. Ask your Norton distributor for it. Or write to NORTON COMPANY, General Offices, Worcester 6, Mass. Plants and distributors all around the world.

G-335

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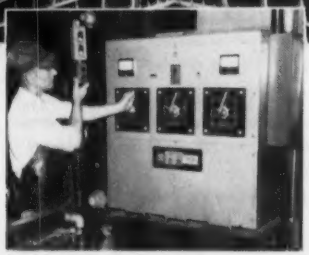
ALUMINUM ANODIZED

Curtain Going Up!



The Marion Davies Building, New York, was completely enclosed in 10 hours—through the miracle of anodized aluminum "curtain" walls. Giant two-story panels are manufactured by General Bronze Corp., using an **H-VW-M AUTOMATIC ANODIZING SYSTEM.**

General Bronze Corp. led the field when they anticipated the vastly increased use of anodized aluminum in the building industry. The same wisdom and foresight motivated General Bronze when they called on H-VW-M to supply their giant, streamlined new anodizing system. **H-VW-M DESIGNED, MANUFACTURED AND INSTALLED** it from beginning to end. And the benefits to General Bronze: tripled production . . . improved quality control . . . and the assurance that H-VW-M—the **ONE SOURCE** they chose—assumed **COMPLETE RESPONSIBILITY** for the entire system, from concept to production.

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- ☐ **ENSTRIP METAL STRIPPERS**—Products for quickly and economically stripping defective plated coatings, coatings from plating racks, excess solder, silver brazing metal and metal smuts, without attacking base metals in any way.
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- ☐ **"ALUMON"**—A product of highest-purity chemicals for preparing aluminum for plating. Used successfully for over 13 years by hundreds of manufacturers, Alumon is economical and easy to use.
- ☐ **EBONOL® METAL BLACKENERS**—Products for blackening copper, brass and other copper alloys; iron and steel; zinc plate and zinc castings.
- ☐ **RUST REMOVERS**—A complete line of chemicals for the removal of rust and scale. Both alkaline and acid compounds are available.
- ☐ **CLEANERS & DEGREASERS**—New alkaline and emulsion-type cleaners for removing grease, oil, and solid dirt from metals.
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- ☐ **ZINC & CADMIUM CONVERSION COATINGS**—Enthox® salts produce iridescent, gold colored chromate coatings with high salt-spray resistance. Very simple and economical to use.

Remember — your metal finishing problem is our business! Since Enthone has been studying these problems, and developing their solutions, for 20 years, chances are we have the answer to your problem in stock. On the other hand, if yours is an unusual requirement, we will be glad to study your needs and develop the precise chemical for the purpose. Just send us a letter, outlining the problem or process—and enclose a sample of the metal concerned, if possible.

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For Buffing IRREGULAR SHAPES

NEW 6" wide buff finger features CHURCHILL Finger-Buff* # 501

Here is a brand new buff that has **proven** its worth for buffing large irregular shapes without excessive wear on any part of the face. This new Churchill Finger-Buff* #501, with the 6" wide buff finger, has **proven** to run at cooler temperatures, to last longer, and to wear down uniformly!

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TYPICAL PARTS FINISHED WITH THE FF-6

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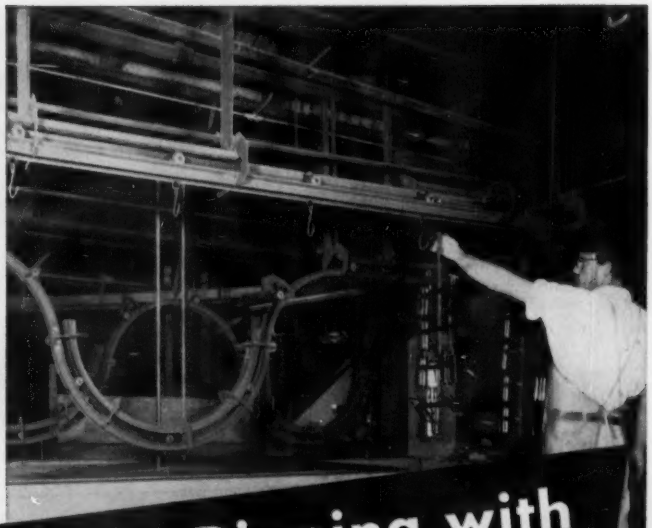

Multiple Dipping with LANDAHL CONVEYOR

Sharp dips and turns are features of this installation. The Landahl Chainless conveyor furnishes both horizontal and vertical turns on a minimum radius of 24 inches. The conveyor carries metal products through a cleaning operation consisting of a series of dip tanks only 6 feet long. It then continues through drying oven to take-off point.

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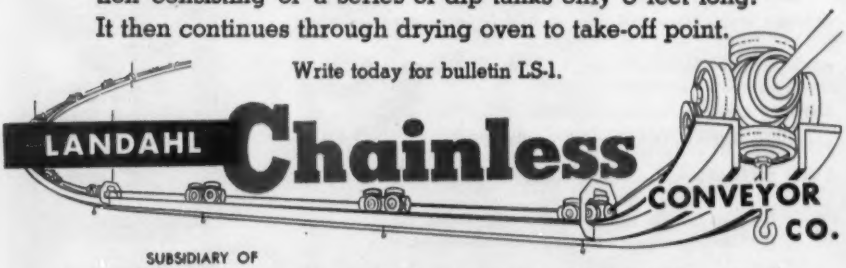

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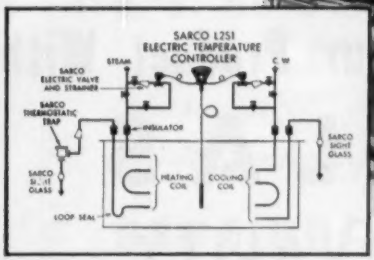

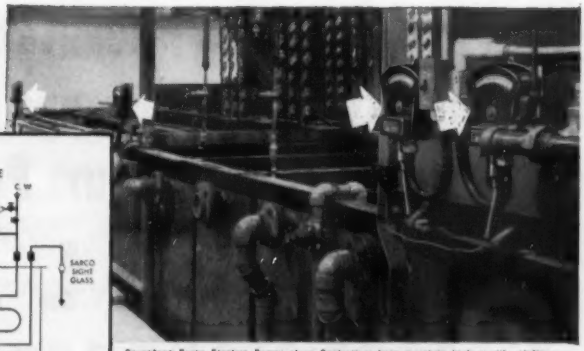

Seventeen Sarco Electric Temperature Controllers help maintain high quality plating—cut costs—at Ronson Corporation, Delaware Water Gap, Pa. Controllers are used on chrome, nickel, copper, silver, and gold plating tanks. This is a repeat installation.

Improve plating quality—cut your costs with low-cost temperature control

Unstable bath temperatures . . . the result of erratic manual temperature control . . . are sure to lead to costly rejects, wasted man-hours and breakdown of plating solutions.

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3234-B

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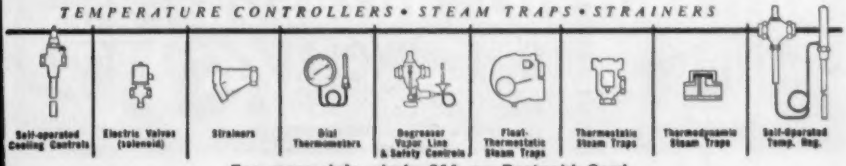

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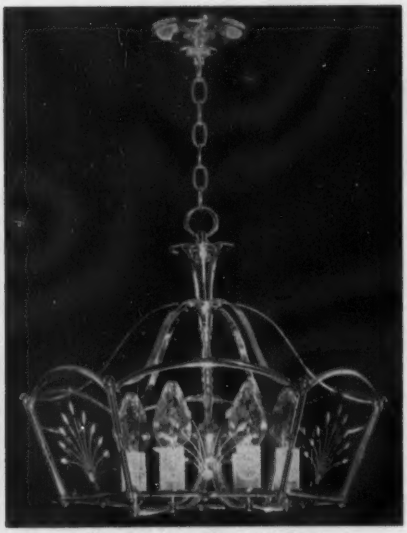

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ECONOMICAL & EASY TO USE . . . Applied by dip, brush or spray at room temperature. Uniform stripping action. Will not affect ferrous or non-ferrous surfaces.

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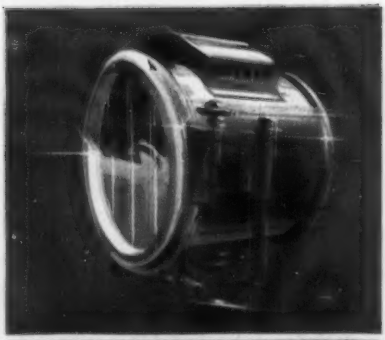

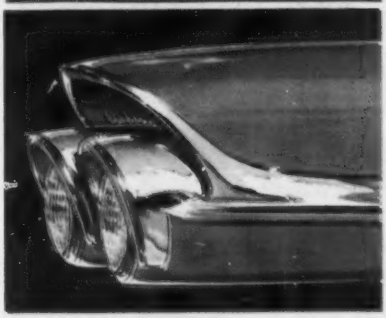

Even back in 1910, part of an owner's pride in his car lay in gleaming brightwork. But polishing and buffing the shiny metal that he loved caused manufacturers plenty of headaches. And so they turned to Acme—and Acme has continued to supply the answers to their finishing problems.

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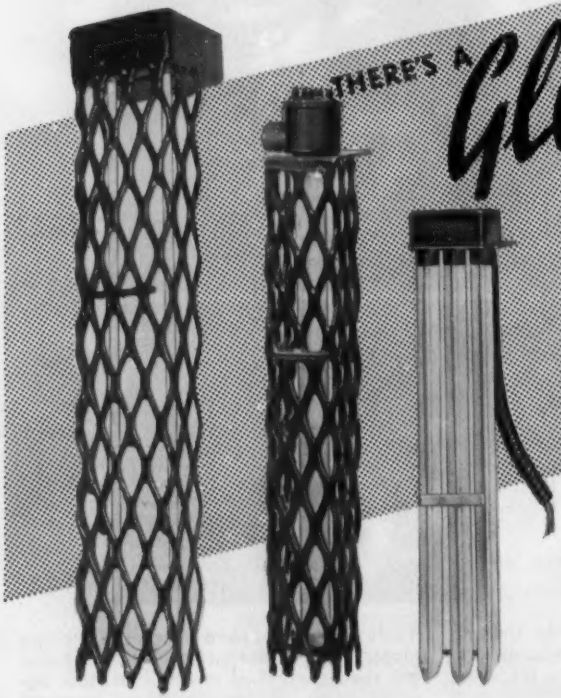

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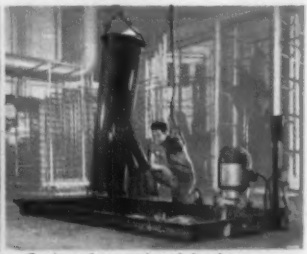

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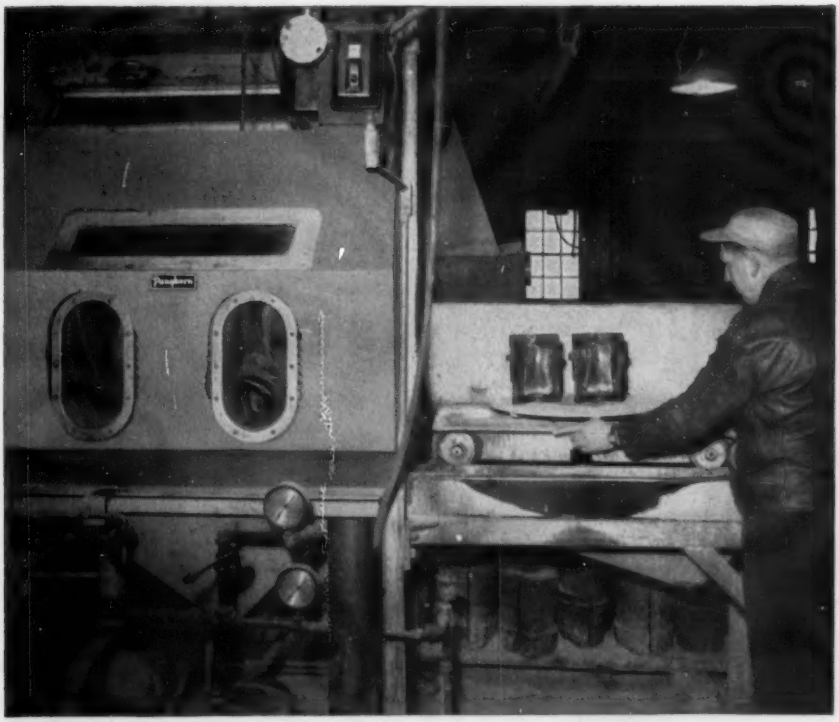

Pangborn Hydro-Finish cut cleaning time 50% in this plant

Paid for itself in only six months

Pangborn Hydro-Finish really paid off for this leading glass manufacturer. Cleaning quality increased mold life 10% to 15% and total cleaning and polishing time was cut in half! The resultant savings paid for the machine in 6 months and represented a substantial weekly sum thereafter.

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USE PANGBORN HYDRO-FINISH FOR:

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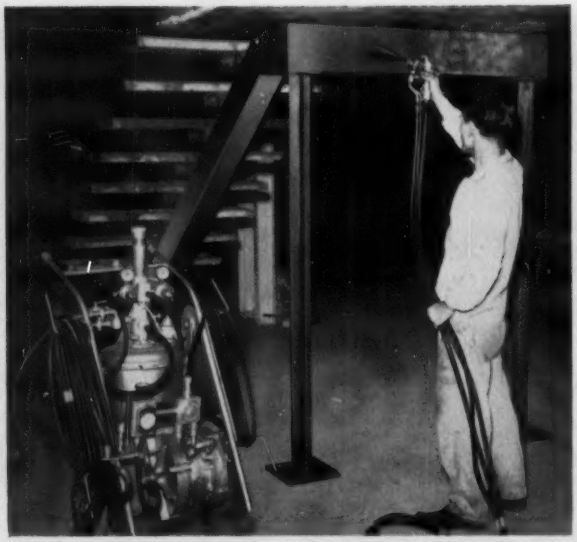

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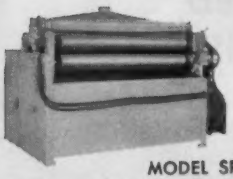
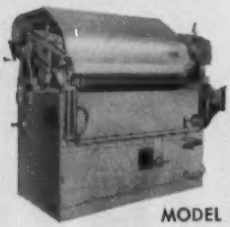


MODEL SPL
24", 36" & 50" belt widths



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Both Models of the Timesaver "Speedbelt" Abrasive Machine can be used in tandem for automatic polishing of tops and bottoms of material being processed . . . in one operation.

Mechanize polishing of aluminum, stainless steel and other metal sheets, bars and blanks — perforated or solid

TIMESAVER *SPEEDBELT* Abrasive Machines are the fastest and easiest machines to set-up for production polishing schedules on the market today. Abrasive belts with grit range from 40 to 220 can be changed in 5 minutes or less. Adjustment for stock thickness can be made in seconds. Feed speed is variable from 35 to 80 SFM with lower or higher speeds optional In addition to polishing, Timesaver Machines are used for metal finishing and deburring operations.

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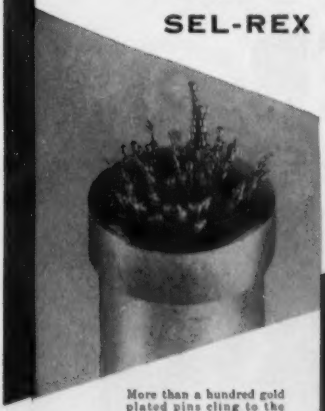

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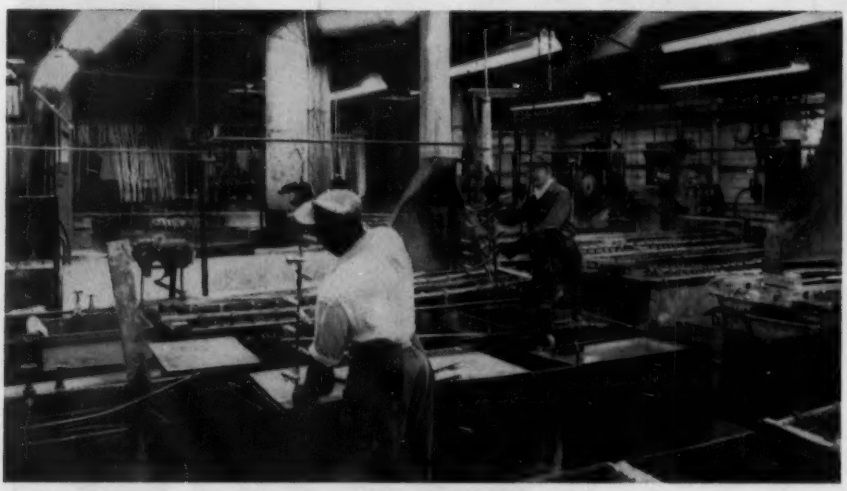

AT this large plating shop, Cowles cleaners (QC, FE, KW, WM, AA and NS) are being used with great success to speed up and improve cleaning operations before plating in these tanks. It has been the experience of this shop (Metal Finishers, Inc.) that one or another of these Cowles cleaners takes care of every job that comes along. And to quote Mr. Ridenour of Metal Finishers, "That's proof of Cowles' reliability, because we get those tough plating and cleaning jobs that many companies won't handle." — For specific information on cleaners for your shop, write Cowles Chemical Company, 7016 Euclid Ave., Cleveland 3, Ohio.

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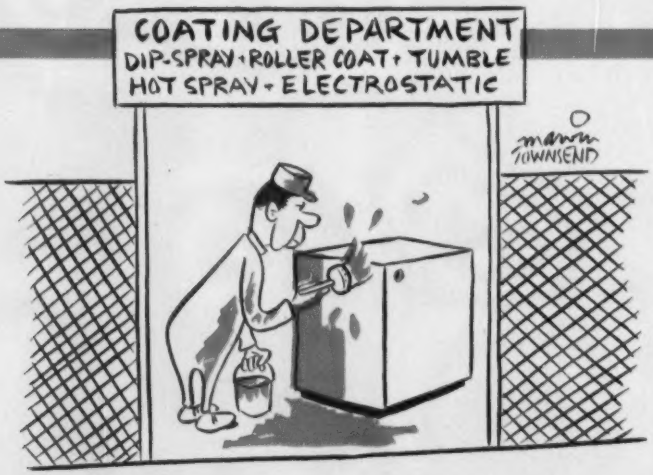
A Survey of Paint



PART V: Roller Coating; Tumble and Centrifugal Painting; Silk Screening; Aerosol Painting.

By EZRA A. BLOUNT
Editor

products feature finishing

A PAINT APPLICATION METHOD which has come into wide use for coating both aluminum and steel coil stock prior to subsequent forming is called roller coating. Roller coat processing equipment makes it possible for metal coil stock to pass through cleaning, metal preparation, painting and baking processes continuously at relatively high speed (as much as 75 feet per minute). Figure 1 shows the finish enamel roller coating machine installed as part of the complete cleaning, priming, baking, finish enameling, and baking line in the K & Z Manufacturing Company, Greensburg, Pa. Following painting and baking, the white aluminum coil stock is sheared and formed

into sections for Keystone Aluminum Siding.

Figure 2 shows a roller coating machine in the Koolvent Metal Awning Company of Pittsburgh. This machine applies baking enamel to both sides of steel strip stock at the same time. The roller coater applies the paint in an even, predetermined thickness (0.01 to 1.0 mil dry) on each side of the strip. The machine is made up of a series of rollers which thread the strip through the coater and transfer the paint to the strip.

The paint is applied to the strip by a reverse coating method. The baking enamel is flowed on the metal strip. This method is designed to eliminate variations in film thickness due to lack of uniformity in commercial metal strip, and any

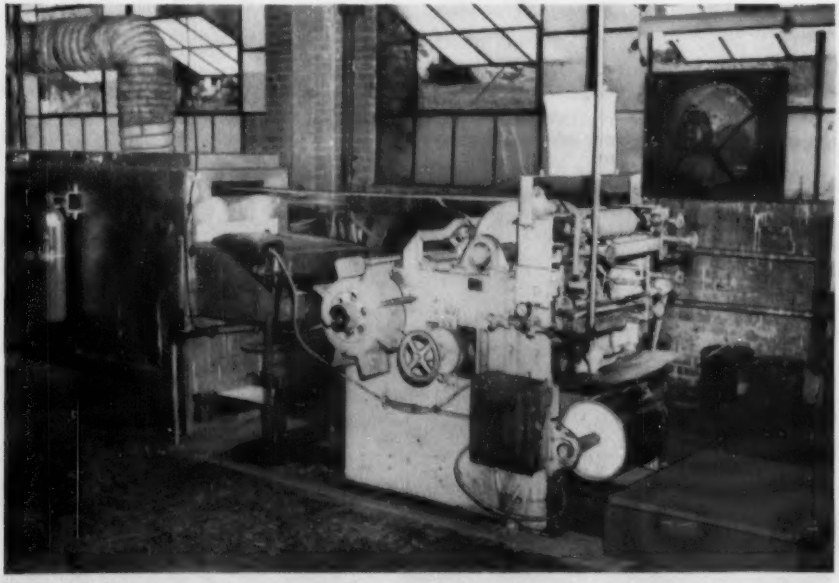


Fig. 1—This Gasway roller coater applies a coat of finish baking enamel to aluminum strip, 11 inches wide and 0.025 inch thick, which has been cleaned, prime coated, and baked. Strip moves through the entire machine at 70 feet per minute. Entrance to finish baking oven can be seen at left. (PRODUCTS FINISHING Staff Photograph.)

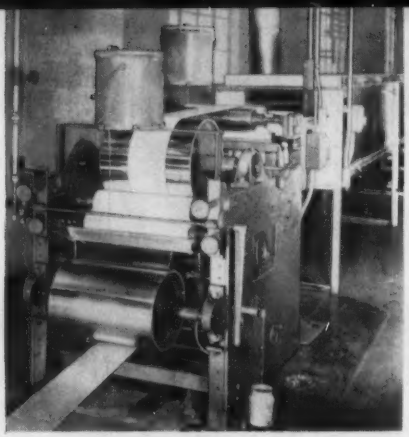


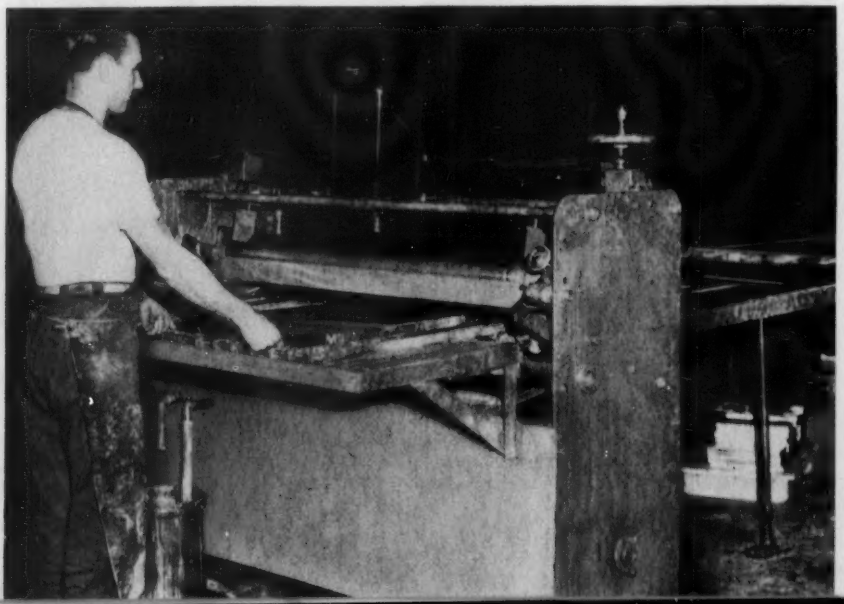
Fig. 2—Roller coating machine at Kool-Vent Metal Awning Company, Pittsburgh, applies baking enamel to both sides of metal strip at one time. Paint film thicknesses of 0.01 to 1.0 mil (dry) can be applied at speeds of up to 75 feet per minute. The cleaning, roller coating and baking installation is set up so that it can handle aluminum and steel interchangeably. (Photograph courtesy the Gasway Corporation, Chicago 26, Ill.)

tendency toward flow-out marks in the finish. A bead of paint is formed at the point where the strip contacts the applicator roller. This paint is drawn out in a uniform film on the surface of the strip as it goes forward, and "sets up" or becomes stable during the short interval between the coater and the bake oven.

The stock is coated at a speed of about 75 feet per minute. The process is efficient from a paint application standpoint. There is practically no waste. Painted coil stock is subsequently sheared and formed without damage to the paint film.

In the manufacture of metal signs, license plates, and similar products, a primary step in the process is the application of an enamel base coat on both front and back of metal sheets or blanks.

Fig. 3—This roller coating machine is used to apply a controlled film thickness of enamel to the front and back of metal sheets used in making signs, license plates and similar products. (Photograph courtesy the Gasway Corporation, Chicago 26, Illinois.)



"Through the use of roller coating methods metal sheets are given a clear base coat, a ground coat, and then a grained finish."

Figure 3 shows how this coat is applied with a roller coater which meters the paint being applied and thus ensures that a controlled quantity of enamel is applied over the entire surface.

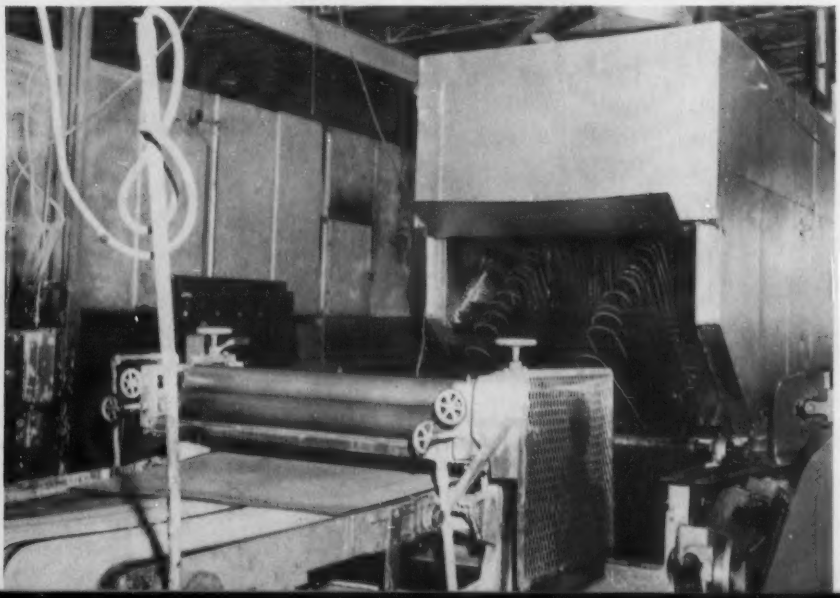
Through the use of roller coating methods, metal sheets are given a clear base coat, a ground coat, then a grained finish (Fig. 4), and finally a clear glaze coat at Hamilton Manufacturing Corporation, Columbus, Indiana. The coated sheets are then press-formed into attractive table tops.

The rollers of the graining machine have the desired grain pattern etched onto the roller. A coating applied to these rollers is transferred to the flat sheets as they are fed through. The rollers that apply this coating must be absolutely true and round if the pattern of the grain is to be reproduced faithfully.

Tumble Painting

A method of applying paint, which is akin to dipping, can be called tumble painting. Using this method, a quantity of parts to be coated can be placed in a tumbling barrel similar to that shown in Fig. 5 or in a horizontal type of plain steel barrel. The exact quantity of paint finish required to coat the articles which have been placed in the barrel, is then added and the drum rotated at speeds varying from 5 to 30 r.p.m. for 5 to 10 min-

Fig. 4—At Hamilton Manufacturing Corporation, metal sheets are grained with a multiple-roller coater. Flat sheets go through the roller coater (foreground) and then are baked in the wicket oven (right background). (PRODUCTS FINISHING Staff Photograph.)



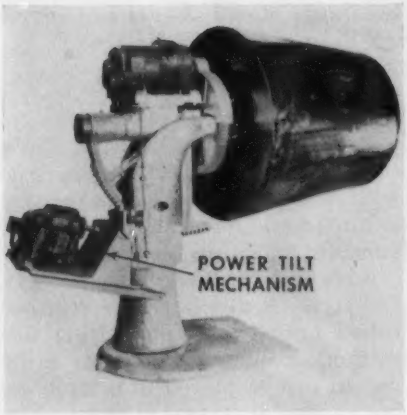


Fig. 5—A tumbling barrel of the general type shown above can be used for tumble painting. (Photograph courtesy Globe Division, Casalbi Company, Jackson, Michigan.)

Fig. 6 — This tumble-mixer is designed to hold a 5-gallon pail. It can be used for tumble painting. (Photo courtesy Rampe Manufacturing Co., Cleveland 10, Ohio.)

Fig. 7—Centrifugal enameling machine, for bulk painting of small parts. (Photo courtesy Leon J. Barrett Co., Worcester 1, Mass.)

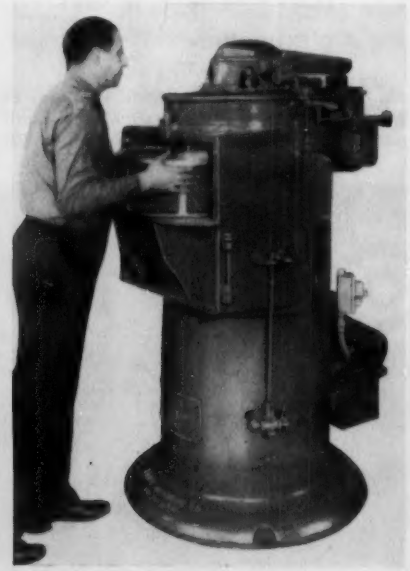


Fig. 8—Operator loads centrifugal enameling machine, which dips parts in paint, spins off excess. (Photo courtesy Ronci Machine Co.)

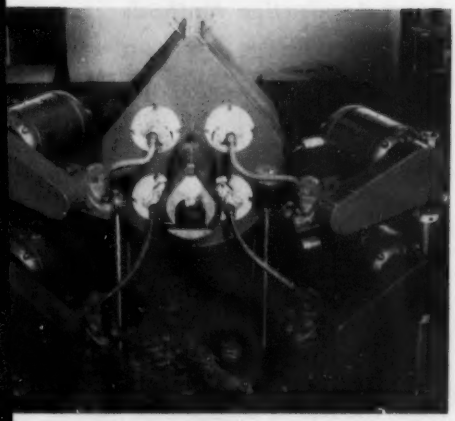


Fig. 9—This Gyromat painting machine is used for coating structural steel, pipe, and similar products. This machine has four spray heads mounted in an atomizing chamber.

utes to spread the paint evenly over the small parts being processed. The parts are then dumped onto a wire screen for air drying, or they can be placed in an oven for baking. A simplified setup for accomplishing tumble painting is shown in Fig. 6.

Centrifugal Painting

To accomplish paint finishing by the centrifugal painting method, the parts to be painted are loaded, either in bulk or positioned, in the removable wire mesh basket outside of the painting machine. The basket full of parts is then immersed in a tank of paint placed beside the machine, removed and allowed to drain momentarily. It is then set into the centrifugal painting machine (Fig. 7) and rotated or spun rapidly for

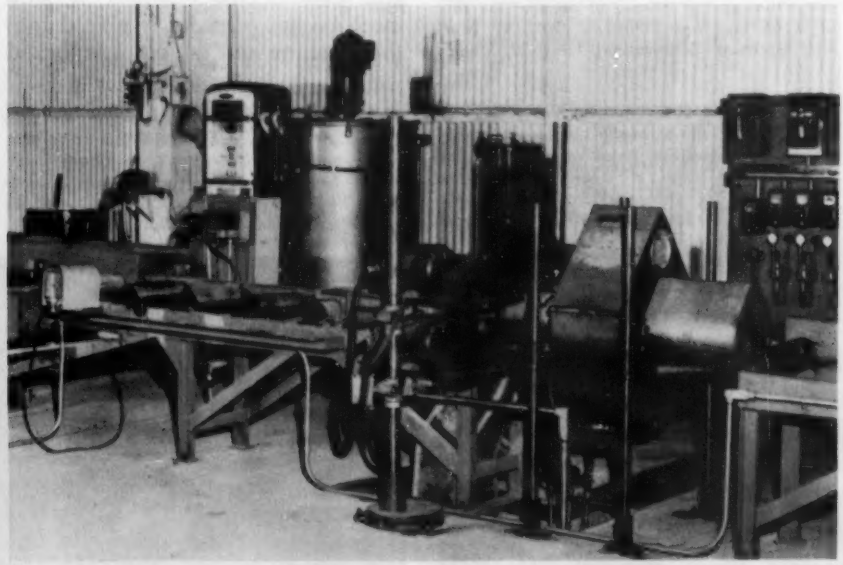


Fig. 10—Overall view of a Gyromat painting installation, used for coating structural steel beams. Collecting chamber is shown installed on the roller conveyor line; the pumping and mixing equipment and automatic control appears in left background of photo.

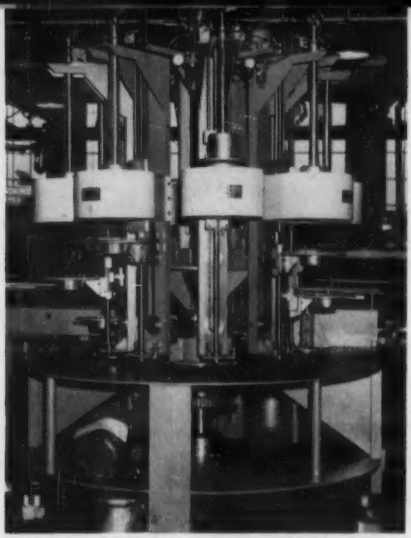


Fig. 11—An eight-station rotary painting machine used for lining inside of metal pails. Spray heads, mounted above painting stations, move down over pails to apply paint. Machine is designed to apply a controlled paint film on the interior of pails at the rate of 3100 per hour. Figs. 9, 10, 11 courtesy Gyromat Corporation, Fairfield, Conn.)

a few seconds to remove the excess paint, after which the parts are spread on a wire mesh tray to dry. In some cases the parts are left in the basket to dry, and in the case of quick drying lacquers, there are times when the parts are actually dried while being spun. This method is used where lacquers and quick drying enamels are involved.

Surplus paint thrown off the parts flows through the liquid outlet at the rear of the machine, where it is caught in a container and poured back into the paint supply periodically.

A somewhat different type of machine is used for baking enamels and slow drying enamels. A wire mesh basket of parts is placed into the machine and the cover is locked

Fig. 12 — At Ebco Manufacturing Co., instructions are silk screen printed on a drink-dispenser cabinet top. Paint has been applied previously to form a smooth, contrasting background for the silk-screened printing. (PRODUCTS FINISHING Staff Photograph.)

Fig. 13—Silk screen application of a light-colored design on a dark background is useful in applying decorations on home appliances. The paint is applied through a specially designed silk screen, so that only the design is reproduced on the metal surface.

in place. The paint is pumped from the supply tank at the rear of the machine into the basket of parts. When the solid container in which the basket sets is flooded and the parts completely covered, the pump is shut off. The parts are spun, and the excess paint is forced through a narrow opening beneath the cover and drained through the liquid outlet at the rear of the machine back into the supply tank. After spinning, the basket is removed and the parts dumped onto drying trays, or if desired, left in the basket to air-dry or be baked.

Another machine for doing centrifugal painting is illustrated in Fig. 8. The parts to be painted are loaded into the wire mesh basket and placed in the machine. The basket is locked in place, and a tank containing the paint is raised until the work is submerged. The tank is then lowered part way to spinning position before the machine is started. As the basket spins, all the excess material is thrown off into the paint tank. The paint tank is then lowered to its original position and the basket is removed, after which the operator dumps the painted parts into trays in which parts are baked or air dried. The machine is ideal for applying clear lacquer. It is not necessary to clean the machine after each job or at the end of the day. To change colors or material, one tank is removed from the base of the machine and another one is inserted.

Gyromat Painting

Figure 9 shows a Gyromat spray painting machine in which centrifugal force is used to atomize the material to be applied, and direct it to

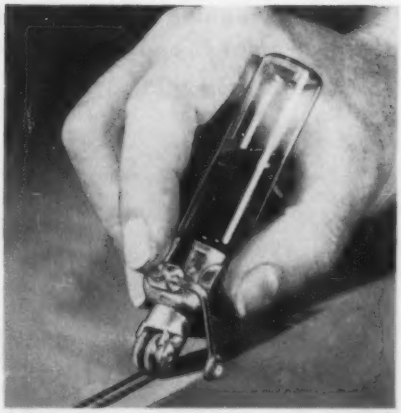


Fig. 14—Decorative stripes may be applied with striping tools of various designs. In addition to the use of striping for decoration, it has a wide field of use as a system of identification of alloys of metals, contents of pipes carrying various liquids, and contents of packages in warehouses. (Photograph courtesy Wendell Mfg. Co., Chicago 18, Illinois.)

products which pass through the open area in the center of the device on a continuous belt conveyor. In this machine (in this case containing four spray heads) paint is pumped into open cylinders, which rotate at tremendous speeds. The atmosphere in the machine becomes saturated with the material being sprayed, so that any product passing through the chamber receives a uniform coat of paint.

The centrifugally driven sprayheads or cylinders atomize the sprayable material inside the collecting chamber. The enclosed collecting chamber, in which the sprayheads are mounted, and through which the articles to be coated pass, contains and collects the overspray. The overspray is pumped by the

". . . silk screening . . . is a hand or mechanical process by means of which paint is applied through a . . . silk screen."

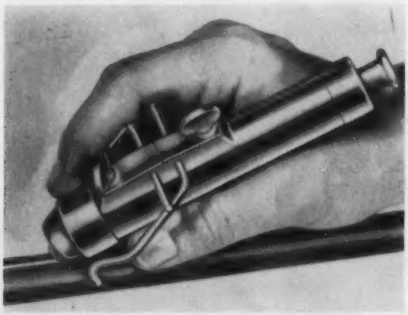


Fig. 15—Tubing, bar stock and similar products may be striped with this paint striper. (Photo courtesy Beugler Manufacturing Co.)

fluid material handling system to the main source tank for reuse. The pumping system pumps and filters the coating material to each sprayhead. Figures 10 and 11 show different applications in which this painting method is being used.

Silk Screen Decoration, Striping

A process of paint application which is used exclusively for decoration is called silk screening (Figs. 12, 13). This may be a hand or mechanical process by means of which paint is applied through a specially manufactured silk screen so that only the design is reproduced on the metal surface. Usually, the surface to be coated has been previously painted and baked. A somewhat similar process, which is completely mechanical, is the lithograph printing of metal sheets.

In cases where it is desired only to decorate products with stripes, hand striping tools can be used. These are available in several designs and models, two of which are illustrated in Figs. 14 and 15. In addition to the use of striping for

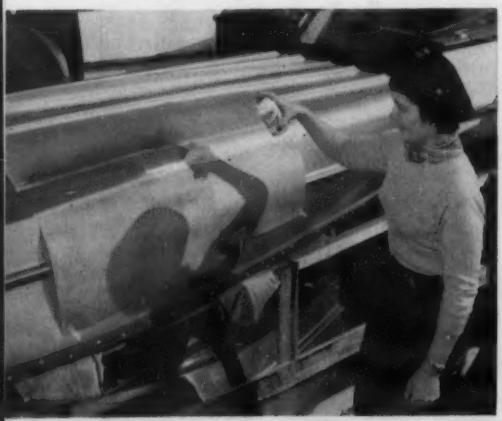


Fig. 16—Aerosol touch-up paints are used for retouching scratches and scrapes on boat hulls and outboard motors. (Photos courtesy Sprayon Products, Inc., Cleveland 3, Ohio.)

Fig. 17—Small metal parts for use in electronic equipment are protected by spraying with a clear aerosol lacquer, as shown above.

decoration, it has a wide field of use as a system of identification of alloys of metals, contents of pipes carrying various liquids, and contents of packages in a warehouse or at destination.

Aerosol Painting

During World War II the use of aerosol bombs containing DDT became quite widespread. Following World War II this method of dispersing a product as a spray was adapted for use with various paint products.

The expansion of the aerosol packaging industry has been spectacular. The use of aerosol propelled paints and lacquers has spread to the home hobbyist, to customer service departments, branch service centers, dealers and to manufacturing plants. The manufactured products represented by this group include appliances, farm implements, metal office furniture, outboard motors, automobiles, and practically any other type of paint finished equipment.

Key to the widespread use of the aerosol paints by dealers and service men for touch-up is the fact that aerosol packagers can supply color- and quality-controlled ("specifica-

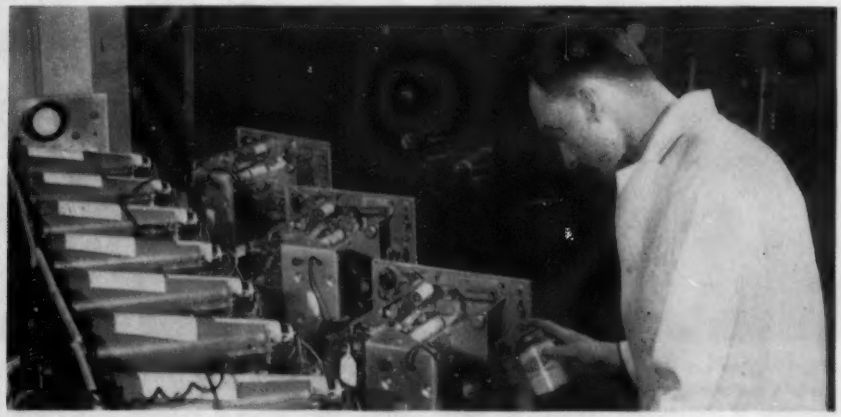


Fig. 18—An Oscilloscope is sprayed with a clear aerosol coating. The equipment is thus protected to ensure retention of stable calibration during long periods of storage.

"Aerosol paint is useful in plant engineering and development departments, for finishing working models . . ."

tion touch-up") paints to match factory-applied finishes.

A small can of aerosol lacquer, for example, can be used for touching up difficult areas on a large part being spray finished in a manufacturing plant. It can be used by a job finisher to paint small lots of samples for customers or prospective customers. The inventory of paint products which must be carried by the job finisher can thus be greatly reduced. Also he can prepare special samples more quickly with a minimum of time and trouble by using aerosol paints.

Aerosol paint is useful in plant engineering and development departments, for finishing working models of new products or plant equipment, because plant engineering departments rarely have the spray finishing facilities necessary.

As an indication of how the aerosol paint application method has been accepted, the Chemical Specialties Manufacturers Association reports that the use of pigmented, metallic paints and clear plastic sprays increased to over 22 million units in 1956.

Polychrome finishes, hammer finishes, enamels, and lacquers all have been successfully packaged and adapted for use in various industries. Naturally, some skill must be developed and certain techniques applied to the spraying of these finishes just as a spray operator must also learn the proper way to operate a spray gun. Aerosols have made a place for themselves in finishing shops and assembly lines, as Figs. 16-20 illustrate.

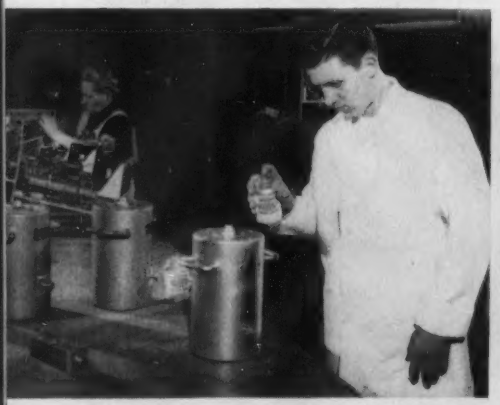


Fig. 19—The exterior of a metal casing of a sample test panel used in radioactivity measurements is finished with an aerosol aluminum spray coating. Figs. 17, 18, 19, courtesy Krylon, Inc., Norristown, Pennsylvania).

Fig. 20—This International Harvester employee is touching up damage on a new tractor right where it happens, saving time, trouble, and possible complaints. (Photo courtesy Sprayon Products, Inc., Cleveland).

finishing clinic

Suggested solutions to problems submitted by readers. Send your problem to our Editorial Staff. There is no charge.

Cleaning Embossed Surfaces Following Spray Painting

Question: *We are confronted with a problem of automatically wiping the surfaces of dials and knobs after paint has been sprayed into the serrations (numbers and lines). This can be accomplished by hand, but we would like to use automatic wiping equipment enabling a production rate of 1,000 conveyorized pieces per hour.*

Do you know of any companies currently making automatic wiping equipment?

R. B. R.

Answer: Several companies manufacture the type of equipment you desire. We have given you the names of these organizations.

★ ★ ★

Automatic Finishing

Question: *We would like to secure an automatic finishing machine, either with a lacquer or quick dry varnish, using a conveyor, so that we can finish approximately 50,000 to 100,000 twelve-inch rules per day.*

C. P. P.

Answer: We are recommending several organizations who design and manufacture automatic finishing equipment. If you present them with your problem, they can suggest the correct machine and equipment for you.

Plating Plastics

Question: *We are interested in securing information on plating of plastics. We would like to obtain solutions for the complete process. We manufacture printed circuits.*

J. H. B.

Answer: We are referring you to companies from whom you will be able to secure information on plating of plastics and information on plating solutions and other materials required for this process.

★ ★ ★

Racks for Anodizing and Plating

Question: *With regard to your "Finishing Clinic" article concerning anodizing racks in the July issue of PRODUCTS FINISHING, please forward tear sheets from the PRODUCTS FINISHING DIRECTORY listing names of companies who specialize in making racks for anodizing and plating. Also, please send list of companies who manufacture protective coatings for racks.*

E. F. E.

Answer: We are pleased to enclose a copy of the 1957 edition of the PRODUCTS FINISHING DIRECTORY. You will note that information on manufacturers of racks is listed on pages 161 and 162 (addresses begin on page 199). Manufacturers of protective coatings for racks are listed on pages 152 and 153.

Finishing Clinic . . .

Electroless Gold

Question: *We are interested in securing a thin gold deposit by dipping. The base metals upon which the gold is to be deposited are brass and copper. We have read an article or have seen an advertisement on this process, but are unable to find the magazine in which it appeared.*

E. F.

Answer: We are enclosing tearsheets from various issues of PRODUCTS FINISHING mentioning companies marketing an electroless gold process. We are also referring you to other companies from whom you can secure additional information on this process. Also, we are enclosing tearsheets of articles on a "Doped" Gold Process, which appeared in the August, 1957 issue of PRODUCTS FINISHING, and on "Electroless Gold" from the September, 1957 issue.

★ ★ ★

Paint for Hot Water Tanks

Question: *I have several inquiries for a paint for interiors of hot water tanks, temperatures ranging from 150 to 180 deg. F. Do you know of any companies making such an item? Also, we are interested in securing a 2000-deg. F. black paint for the fronts of engines.*

I. E. F.

Answer: As you can visualize, the service requirements for paint on the interior of hot water tanks are most severe, but we believe that the companies to whom we are referring you can suggest a product which will be satisfactory.

We are also suggesting companies who can supply a black paint which will withstand 2000 deg. F.

Automatic Vacuum Lift

Question: *On page 72 of the August issue of PRODUCTS FINISHING is a photograph of a Union Automatic Vacuum Lift. We feel that a lift similar to the one shown would be helpful in our cold strip finishing department.*

Please tell us the company's location and nearest sales representative.

D. C. C.

Answer: We are forwarding a copy of your letter to the company who manufactures the product in which you are interested, requesting that they tell you the name of the nearest sales representative.

★ ★ ★

Conveyorized Finishing Setup

Question: *We have been working on the design of shelves, drawers and bins for kitchen cabinets. These are to be made of cold-rolled steel and finished with a white enamel. We will run 1,000 to 10,000 of each at a time.*

We would appreciate receiving reprints of articles which would aid us in setting up a finishing department.

R. B.

Answer: With this letter we are sending reprints of the following articles which may be of value to you in establishing your new department:

"Finishing Floor Registers and Grilles at the Auer Register Company"

"Finishing Refrigerators With Hot Sprayed Enamel"

"High Production and Safety Planned Into Sheet Metal Finishing System"

"Hot Spray Improves Quality, Painting Speed"

You may also be interested in writing to manufacturers of conveyorized finishing systems listed in the PRODUCTS FINISHING DIRECTORY, beginning on Page 86.

Finishing Metal Furniture to Withstand the Acid Treatment

LABORATORY FURNITURE CO., Mineola, N. Y., manufactures metal cabinets and fume hoods for laboratories. Since acid and acid fumes are permanent residents of almost any laboratory, the cabinets and fume hoods must be made to withstand these corrosive chemicals. This forty-year-old company has found that the most important step in applying a finish that will withstand chemicals is to produce one that adheres to the metal like lint on a blue suit.

To get such adherence, the company cleans the metal thoroughly and applies a phosphate coating, then a primer coat and finish coat. Both primer and finish coat are baked on.

The modern semi-automatic fin-

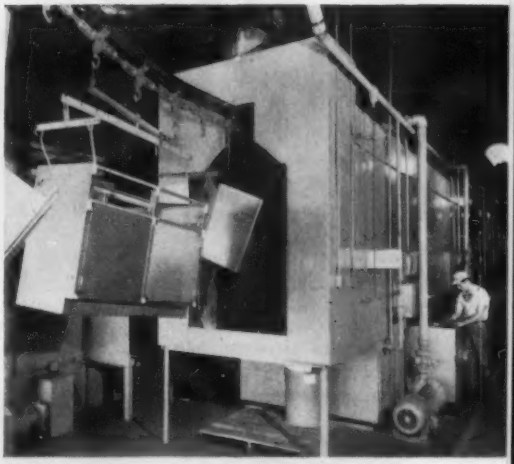


Fig. 2—Entrance to washing machine in Laboratory Furniture plant. Parts on conveyors are cleaned and phosphatized in this unit.

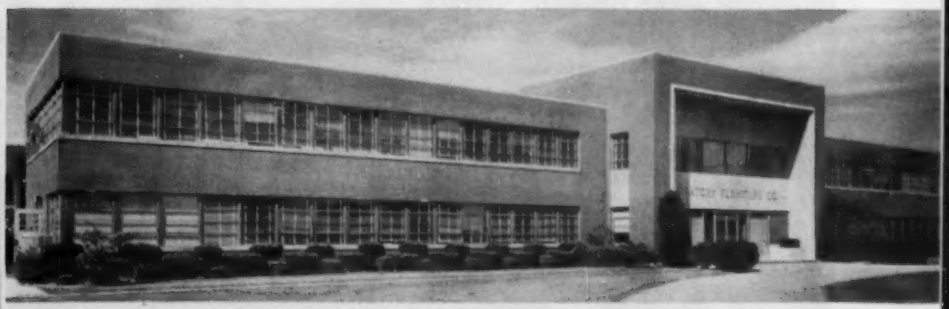


Fig. 1—Laboratory Furniture's modern plant in Mineola, New York, produces more than 5,000,000 pounds per year of metal furniture for chemical and other research laboratories.

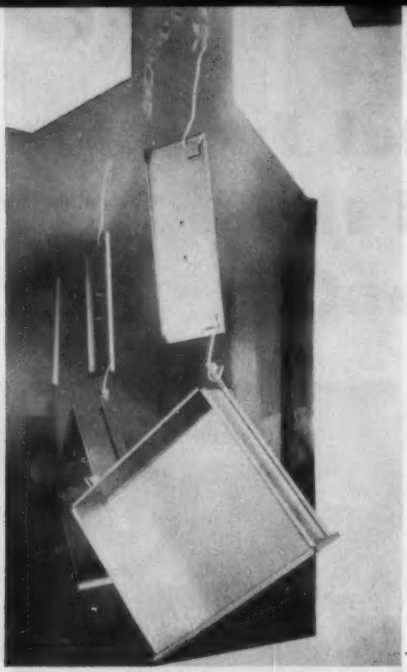


Fig. 3—Close-up of parts entering the 72-foot-long, six-stage washing machine.

ishing system used to apply this finish was installed by Despatch Oven Company about seven years ago, when this company moved into its new plant.

The entire system is conveyorized. A Jervis B. Webb conveyor, 1,000 feet long, carries the metal parts—doors, panels, drawers, and so on—through the various preparatory and painting and baking processes. Hooks — 720 of them — are spaced 16 inches apart on the overhead monorail. Conveyor speed: seven feet per minute.

Parts are first cleaned and phosphatized. The six-stage unit that does this job is 72 feet long.

The 10-minute preparation process is as follows: spray clean with

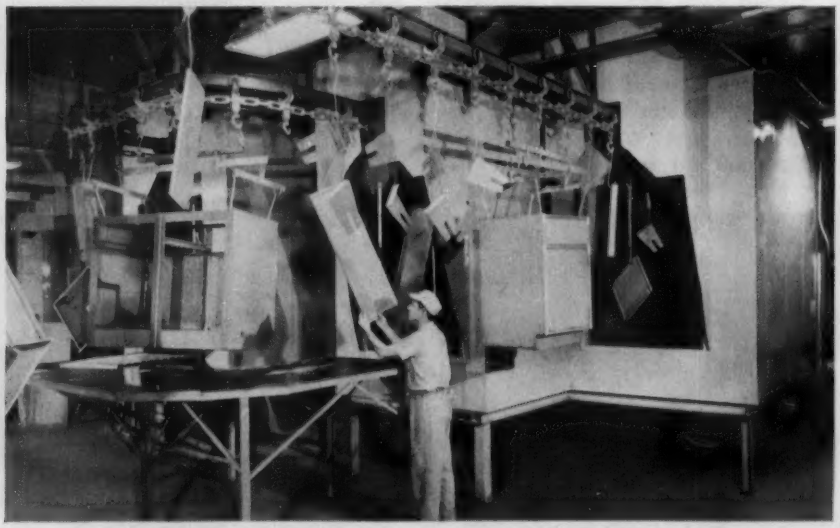


Fig. 4 — Cleaned, phosphatized parts leave washer (left) and enter drying oven (right).

Fig. 5—Painters work with five different spray guns, each of which is loaded with a different color of paint. This booth is one of two water-wash installations in the system.

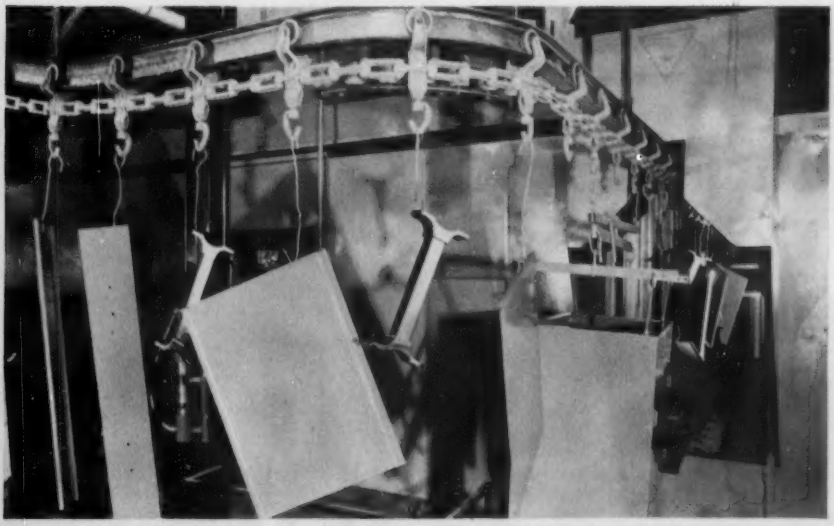


Fig. 6—Painted, dried parts emerge from finishing oven with high-gloss, acid-resistant finish.

". . . planning makes it possible to spray five colors in the same day without interrupting production."

solution of Parco 330A (180 deg. F.); rinse (180 deg. F.); rinse (180 deg. F.); spray phosphatize; rinse in cold water; rinse in chromic acid (one pint of chromic acid in 300 gallons of water). Temperature, strength, pressure and volume of the various solutions are checked four times daily.

Following the six-stage metal-preparation process, the metal parts make two passes through a Despatch dry-off oven that is 21 feet long and 12 feet wide. In six or seven minutes the metal furniture is dry and ready for priming.

Spray painters prime all the parts with zinc chromate and iron oxide primers. This is done in about four minutes in a water-wash spray booth, as the parts pass through on the conveyor. The water-wash booth is 23 feet long. It has a 3,000-gallon water curtain. About 50 gallons of primer per day are used.

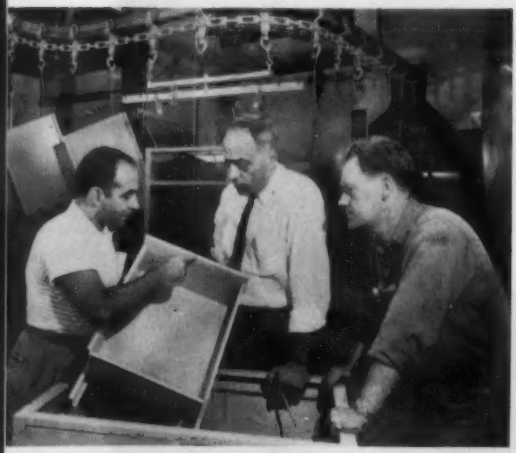


Fig. 7—Officials of Laboratory Furniture examine quality of acid-resistant baked finish on a cabinet drawer. (Photos courtesy Despatch Oven Co., Minneapolis, Minnesota.)

Primed parts are baked for 15 minutes at 350 deg. F. in an oven where the parts make several passes to consume the proper time while still moving on the conveyor. Leaving the oven, parts travel on the conveyor for about half an hour at room temperature. This allows them to cool while an inspector checks them and sands out defects.

The finish spray room is a duplicate of the primer spray room, but the problems are greater here, since several colors must be applied.

To facilitate color changes, all of the colors that are to be sprayed during a given day are planned in advance. The paint foreman makes sure that he has pressure tanks full of each of these colors. He knows when each batch of parts will come through. Different colors are separated by an empty space of 15 feet on the conveyor.

When the last part in a batch passes through the booth, the three sprayers lay aside the guns they've been using and pick up the one that has been prepared with the new color. The paint foreman then sees to it that the "dirty" guns are cleaned and hooked up to the proper tank for future production, based on his orders. This kind of planning makes it possible to spray five colors in the same day, without interrupting production.

The 3,000-gallon water curtain in both the primer and finish spray

booths flows at 700 g.p.m. The water contains an alkaline solution that keeps the paint flocculated, so that floating paint waste can be skimmed off twice daily.

A make-up air system serves the spray booth, furnishing clean, filtered air at the rate of 65,000 c.f.m. The air is taken from outside the plant, heated (in winter) and blown over the spray into the water curtain, carrying the overspray paint with it.

Laboratory Furniture ends its finishing procedure by baking parts at 350 deg. F. The parts make six passes through the oven, which takes about 42 minutes. The oven atmosphere is filtered to ensure a dust-free finish.

Units travel on the conveyor for another 100 feet at room temperature. They are then cool enough to be taken from the conveyor and assembled.

Twelve men operate the entire system: three loaders, one attendant for the phosphatizing machine, one inspector, six sprayers, and one unloader. The system handles about 5,000,000 pounds of finished material annually.

Little maintenance is necessary for this system. The company shuts down the finishing line twice a year for a thorough cleaning. The spray booths are stripped completely and the ovens are vacuum cleaned.

The system is protected by an alarm that stops everything if some section is not operating as it should. If the ovens are not heating properly, for instance, the whole system will be stopped automatically and will not operate until repairs are made. A constant inspection routine that includes weekly checks of all electrical equipment and belts in the system completes the maintenance procedure.

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Brush Wheels Finish Shaver Heads

Two operators feed and unload cutting heads for electric shavers on an automatic buffing machine in the Lancaster, Pennsylvania, plant of Schick, Inc.

The close-tolerance heads are held in pairs by special arbors on their trip through a double brushing-buffing operation. Two special cloth and tampico brush wheels built for Schick by Hanson-Van Winkle-Munning Co., Matawan, N. J., clean and polish the heads. The alternated brush and impregnated cloth construction of the wheels cuts friction heat and reduces parts damage.

Two operators load and unload cutting heads for electric shavers on an automatic buffing machine. (Photo courtesy Hanson-Van Winkle-Munning Co., Matawan, New Jersey).

Surface

North Vernon Processing Co., North Vernon, Indiana, specializes in finishing parts for appliance makers throughout the Midwest. The company polishes, plates, and paints parts ranging from stove tops to narrow metal moldings.

By GERARD H. POLL, JR.
Associate Editor

STEEL STOVE TOPS THAT are difficult to polish and plate because of their size and shape are being produced by an Indiana job plater in both bright and satin-finish chromium. Plating steps to produce either the satin finish or the bright chromium are the same. Only in metal preparation and mechanical finishing do the two processes differ. In both cases, North Vernon Processing begins with the formed raw steel stove top (11 to 18 gauge) and performs the mechanical finishing and plating to produce a top that is ready for assembly.

Bright Chromium

In preparing the large, one-piece

Finishing Formed Steel Shapes

Fig. 1 (left)—Polishing a one-piece stove top with one of a series of set-up wheels. Company makes its own set-up wheels. Each operator polishes an entire piece with the grits necessary to produce the finish desired.

★ ★ ★

Fig. 2 (below)—This stove top is being removed from the copper-flash tank. After rinsing and acid dipping, it will be nickel plated.

top for production of a mirror-bright chromium plate, the first step is to polish the raw steel with set-up wheels. To produce the desired finish, the polishing machine operator (Fig. 1) uses the following sequence of set-up wheels: 90, 120, 180, 240 and 240 grit.

To clean and activate the metal prior to copper plating, the company uses this process:

1. Soak clean in a solution of MacDermid Metalex W Special (8 oz./gal.) at 180 deg. F.

Fig. 3—A copper plated stove top is being buffed with cloth buff mounted on Hammond buffing lathe. It will receive bright plate.

Fig. 4—Stove top being polished in preparation for satin finishing, using slack-of-belt technique. Operator moves top back and forth, applies pressure with a hand block.

2. Reverse electroclean in a solution of MacDermid Anodex NP-2 (12 oz./gal.). 180 deg. F.
3. Rinse in cold running water.
4. Dip in 20 per cent solution of muriatic acid.
5. Rinse in cold water.
6. Copper strike in cyanide copper (Fig. 2).
7. Rinse in cold running water.
8. Dip in 20 per cent solution of muriatic acid.
9. Rinse in cold water.

The stove top is then plated in an air-agitated Unichrome pyrophosphate copper plating solution. After rinsing and drying, the top is taken back to the buffing room. It is hand buffed on Hammond lathes, using sewed buffs and tripoli (Fig. 3).

Parts are now ready to go through the nickel plating cycle. This includes the following steps:

1. Soak clean in a solution of Metalex W Special.
2. Reverse electroclean in MacDermid Anodex 61X electrocleaning solution (8 oz./gal.) at 180 deg. F.
3. Rinse in cold running water.
4. Dip in 20 per cent solution of muriatic acid.
5. Rinse in cold water.
6. Copper strike in cyanide copper.
7. Rinse in cold running water.
8. Dip in 20 per cent solution of muriatic acid.
9. Rinse in cold water.
10. Nickel plate in a No. 31 Udylite bright nickel solution.

Cathode rod agitation. Anodes are bagged. A Sarco automatic temperature control is used to maintain a uniform solution temperature.

11. Rinse and dry.

A light coloring operation with loose cloth buffs is used to bring the nickel plate to a uniform mirror-bright finish.

The final step in processing the stove tops is chromium plating, which is performed as follows:

1. Electroclean in a solution of MacDermid Chrome Resistex, (6-8 oz./gal), direct current, temperature 180 deg. F.
2. Rinse in cold water.
3. Activate. Dip in 10 per cent sulfuric acid, containing 0.4 oz./gal. MacDermid Chromatex. Reverse current.
4. Water rinse.
5. Chromium plate in Unichrome SRHS 110. 105 deg. F.

Plating and processing tanks are steel, rubber-lined steel, lead-lined steel, or plastic. The company designs and builds its own plating racks to suit the parts being processed, insulating them with Miccrosol plastisol coating to protect them from plating solutions.

A Niehaus fume separator is used to remove chromium plating fumes from the air near the chromium plating tanks. This equipment incorporates a blower to draw contaminated air from the tanks. The air is drawn through a duct into which sprays of water are introduced. These sprays are reduced to fog by the blower that brings in the contaminated air. The fog produc-

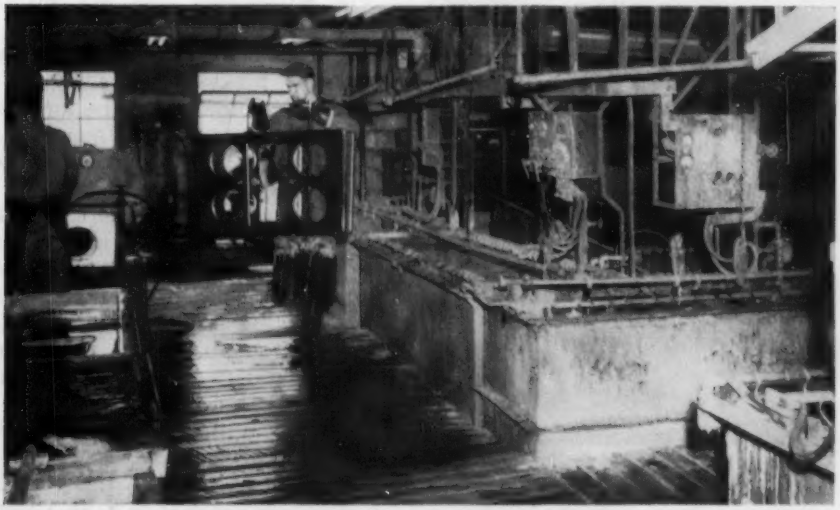


Fig. 5—Operator has just removed this stove top from a bright nickel plating tank. Plating and processing tanks are steel, rubber-lined steel, lead-lined steel or plastic. After rinsing, this top will be taken to the polishing room, where it will be polished with a coated abrasive buff to produce a satin finish. Chromium plating cycle completes the process.

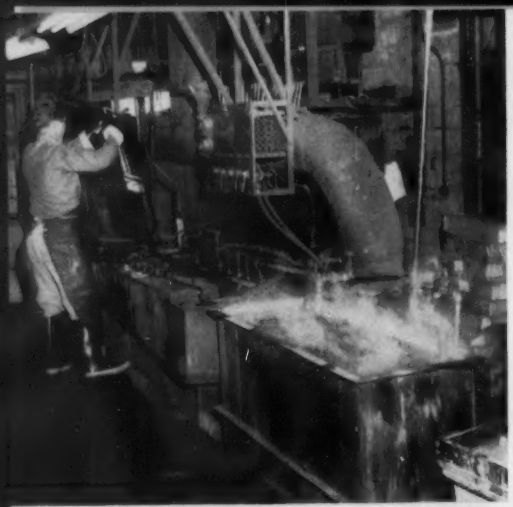


Fig. 6—Appliance parts being removed from chromium plating tank. Satin-finished parts are then rinsed, dried, packed for shipment.

Fig. 7—A formed, mill-finished stainless steel trim strip being buffed on a Standard Electrical Tool lathe. Operator uses wood block to support piece while it is being buffed. This part will be chromium plated to match color of other parts used on the same refrigerator. Then it will be selectively painted.

ed intimately mixes with the plating fumes, dissolving them. The clean air is then exhausted back into the room. This device avoids the problems encountered by exhausting corrosive fumes into the atmosphere, saves heat by returning the air back into the room, and makes working conditions more pleasant by lowering fume concentration in the plating room.

Power for plating is supplied by rectifiers and a 2000 amp.-6-volt Hanson-Van Winkle-Munning generator. Thickness specifications are checked with an Aminco-Brenner Magne-Gage. The company plates a minimum of 0.001 inch of copper, 0.00075 inch of nickel, and 0.00001 inch chromium.

Satin Chromium

For stove tops that are satin-chromium plated, only the mechanical preparation technique differs from the process previously described. Beginning with the formed steel stove tops, the first step is to place the tops on a polishing table beneath an abrasive belt (Fig. 4). The abrasive belt is powered by a floor-mounted backstand idler. The operator moves the stove top back and forth under the slack of the belt, applying pressure against the belt with a cushioned polishing block as he does so. An 80-grit belt is used for this operation. A 120-grit lathe-mounted polishing wheel is used to polish the edges.

After polishing has been completed, the parts are copper flashed and nickel plated (Fig. 5).

Following nickel plating, the stove top surface is mechanically

satin finished with a 180-grit emery coated abrasive buff. This produces a series of long, even, uniform scratches in the nickel plate. No lubricant is used. The abrasive buffs are run dry.

The edges of the stove tops are polished on a hand wheel with coated abrasive buffs, completing the satin-finishing process.

The stove tops then return to the plating room to be cleaned and chromium plated in the same manner as outlined previously (Fig. 6). The finished product approximates the appearance of stainless steel.

Plating and Painting Decorative Strips

Another interesting part produced by North Vernon Processing is a stainless steel trim strip for refrigerators.

These formed stainless strips are first hand buffed with a cloth wheel, using Speedie Stainless Steel Composition S-2250A (Fig. 7).

These polished stainless steel strips are then chromium plated in a process very similar to the chromium plating sequence outlined above, except that a less concentrated chromium plating solution is used. These parts are plated to match the color of other parts used on the same refrigerator.

The flat strip, about two inches wide, has raised rounded edges, and is flat between the two rounded edges except for raised lettering. A striking design is produced by painting the letters white and the flat background surface black, leaving the chromium plating exposed on the rounded edges.

This selective painting job is performed in a four-stage process:

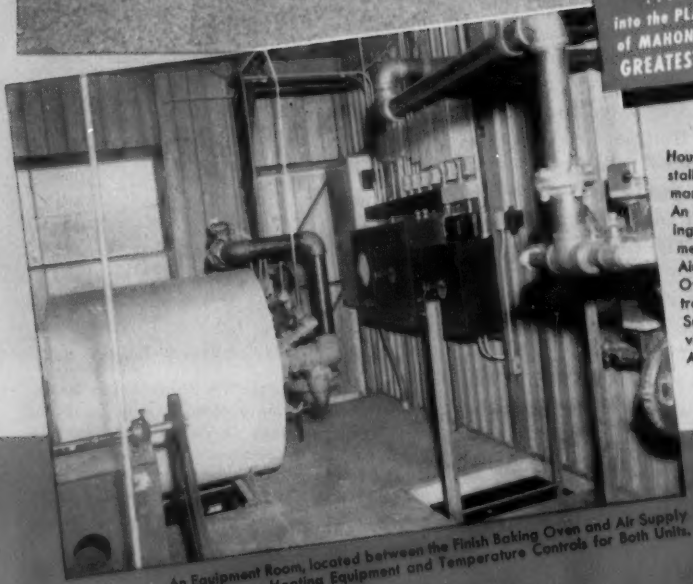
1. Spray the raised letters and a small area about them with a Jones-Dabney white baking enamel (Fig. 8).
2. Bake in a batch-type oven for 20 minutes at 300 deg. F.
3. Using a Conforming Matrix spray mask over the white-painted raised letters, paint the background with a Jones-Dabney black baking enamel.
4. Bake in a batch-type oven for 20 minutes at 300 deg. F.

The result is an attractive trim strip: white letters on a black background accented by chromium plated boundaries.

Fig. 8—Refrigerator trim strips being lettered, using Conforming Matrix spray masks in M & E Spray booth. DeVilbiss cup guns are used to apply enamel. Operator on left sprays white on small areas, covering each raised letter. Sprayer on right puts masks over letters and sprays background black.

COMPLE

. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!



An Equipment Room, located between the Finish Baking Oven and Air Supply Room, Houses Heating Equipment and Temperature Controls for Both Units.

Above is the Mahon Self-Housed Finish Baking Oven installed on the Roof of the Hussmann Refrigerator Co.'s Plant. An extension of the Oven Housing is divided into two compartments which house the Filtered Air Supply Equipment and the Oven Heating Units and Controls for both Oven and Air Supply. Louvered Air Intake is visible on the Roof over the Air Conditioning Room.

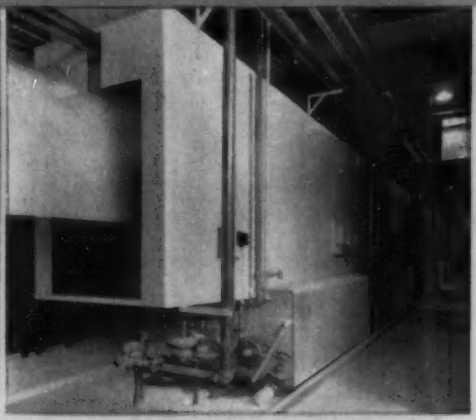
M

E

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH

o Mahon Hydro-Filter Spray Booths, one 48 Ft. and one Ft. long, are Enclosed in an Air Conditioned Spray Room.



Mahon Five-Stage Metal Cleaning and Rust Proofing Machine—Part of the Complete Mahon Finishing System at Hussmann.

MAHON Installs THIRD COMPLETE FINISHING SYSTEM in HUSSMANN REFRIGERATOR PLANT!

In addition to several smaller projects, the Mahon Company has installed three Complete Finishing Systems for the Hussmann Refrigerator Co., St. Louis, Mo. The latest one, illustrated here, was designed to paint steel shelving. It consists of a five-stage Metal Cleaning and Rust Proofing Machine, a Dry-Off Oven, two Hydro-Filter Spray Booths, an Air Conditioned Spray Room, and a Finish Baking Oven. The Cleaning and Rust Proofing Equipment, Dry-Off Oven and Air Conditioned Spray Room are located inside the plant; the Filtered Air Supply Equipment and the Finish Baking Oven are housed on the roof. This is a typical Mahon Finishing System designed to occupy a minimum of floor space inside the plant, and to do a particular finishing job efficiently and economically. Repeat orders from customers over a period of years is an unquestionable expression of confidence in the Mahon organization, and it is an unspoken tribute to Mahon engineering, and to the quality and operating efficiency of Mahon equipment. If you have a finishing problem, or are contemplating new finishing equipment, you, too, will want to discuss methods, equipment requirements and possible production layouts with Mahon engineers . . . you'll find them better qualified to advise you, and better qualified to do the all-important planning, engineering and coordinating of equipment, which is the key to producing the finest finishes at minimum cost. See Sweet's Plant Engineering File for information and representative installations, or write for Catalogue A-658.

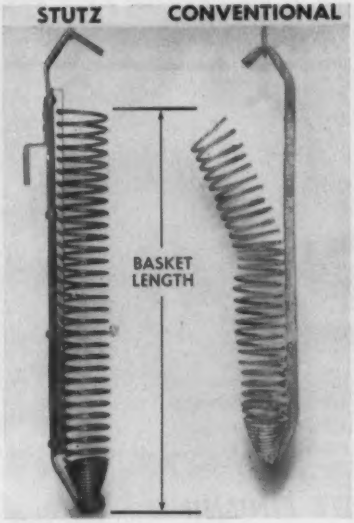
THE R. C. MAHON COMPANY, Detroit 34, Michigan • Branch Offices in New York and Chicago

Engineers and Manufacturers of Metal Cleaning and Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Spray Booths, Flow Coaters and Dip Coaters, Drying and Baking Ovens, and Complete Conveyorized Finishing Systems.

AHON

STUTZ

BALL ANODE CONTAINER
NEW CONSTRUCTION
FOR LONG SERVICE



STUTZ CONSTRUCTION — Heavy gauge steel with wire woven through steel angle firmly attached to main stem. Cannot come apart or loosen. Side clip is for STUTZ BARREL PLATING TANKS having submerged rectangular anode bars. Side clip not furnished for racked plating tanks. Standard hook 6 inches. Other hook lengths furnished in quantity of 100 or more.

WELDED CONSTRUCTION — Note how welds have dissolved or broken in use. Often caused in barrel plating where currents are high and barrel transfer is rapid.

PRICES—11 cents per inch for basket lengths 18 inches or longer. Increments 3 inches. Curved containers 15 cents per basket additional.

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THE STUTZ CO.
4410 Carroll Ave., Chicago 24, Ill.

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● Use Pentrate®...

the finest black oxide available at low cost with trouble-free operation. Produces jet black finish on all steel, regardless of composition or hardness.

Write for literature, send samples for treatment or give us your problems — our laboratory staff is available to help solve them.

A new folder describing the full line of black oxide finishes, chromate finishes, cleaners, oils, and strippers is yours for the asking.

Heatbath Corporation
Springfield 1, Mass.
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34 Years of Service to the Heat Treating and Metal Finishing Industry

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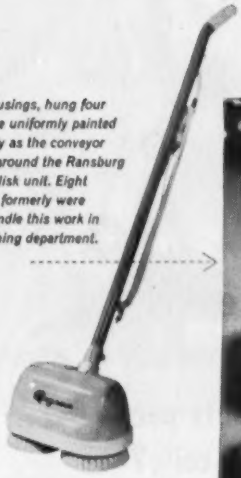
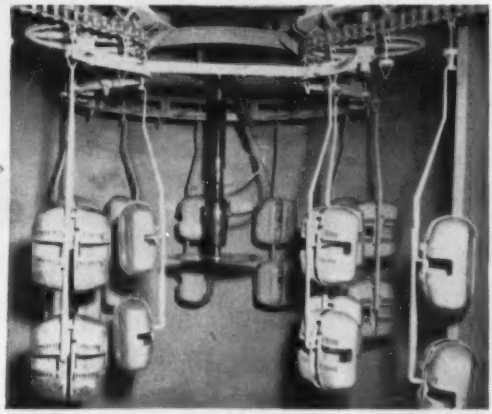
Regina Reports 50% Paint Saving with RANSBURG NO. 2 PROCESS

Electrostatic Spray Painting

That's because Ransburg No. 2 Process puts the paint on the product instead of up the stack



Aluminum housings, hung four to a fixture, are uniformly painted electrostatically as the conveyor makes a loop around the Ransburg reciprocating disk unit. Eight hand sprayers formerly were required to handle this work in Regina's finishing department.



The Regina Corporation, Rahway, N. J., replaced hand spray with Ransburg No. 2 Process to paint their twin-brush Floor Polisher and Scrubber, and their Electrikbroom.

Now, a single reciprocating disk unit automatically handles the work which formerly required eight hand sprayers. Even with increased production, Regina is using 50% less paint. Quality of the work is improved with maximum uniformity on all parts.

NO REASON WHY YOU CAN'T DO IT, TOO! Want to know what Ransburg No. 2 Process will do for you in your finishing department? If your present production justifies conveyorized painting, let us prove the many cost-saving benefits which can be yours. Write for our No. 2 Process brochure which pictures many on-the-line examples of electro-coating on a wide variety of products, and describes our free survey service.

Ransburg ELECTRO-COATING CORP.

RANSBURG

Indianapolis 7, Indiana

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Looking for more "shots per dollar" in vacuum metallizing coils?

By switching to the best coil design, vacuum metallizers have realized as much as 30% more shots per dollar from Sylvania Tungsten Coils. Why is this possible? Because Sylvania helps vacuum metallizers find the right coil to do their job most economically. Whether you buy ready-made coils or form your own from tungsten strand, Sylvania is ready to help you get maximum efficiency.

Sylvania coils are formed of high density tungsten strand manufactured to exacting standards of quality control. Sylvania Tungsten Strand is available in 3 to 7 ply with wire diameters of 0.020 to 0.600 inches per strand.

We invite you to write, outlining your specific requirements and problems.

SYLVANIA ELECTRIC PRODUCTS INC.
Chemical and Metallurgical Division
Towanda, Penna.

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HOW WAGNER SERVICE CUT PLATING COSTS 20%

Fred Janke (right), Works Manager, to Angelo Comito, Superintendent of Hancock Mfg. Co., Jackson, Michigan: "A major saving in our plating department is the elimination of maintenance of rectifiers. Wagner's suggestion has stopped corrosion and stock replacements."

You've heard manufacturers of industrial equipment talk of their "service"—but all too often service is indefinite, and as time proves, of little real benefit to you. But *some* service is effective and Wagner Brothers' service comprises a good part of the commodity you buy.

For example, when Hancock Manufacturing Company asked several plating equipment manufacturers to submit suggestions for improving the efficiency of their zinc plating department, Wagner Brothers jumped at the chance to demonstrate the real meaning of "service". No other vendor saw room for improvement – but Wagner Brothers' representatives analyzed Hancock's problems and came up with answers which have paid off in the most tangible ways – in better plating, reduced maintenance, more production from the existing automatics and competitive pricing. Here's how:

- Rectifiers were changed from individual 1500 amp. units to 5000 and 6000 amp. Wagner selenium cubicles installed in an adjacent room with control panels in the plating room.
- Solutions were replaced with Wagner proprietaries.
- All buss bars were replaced with buss of greater capacity to increase the productivity of the automatics.
- Racks were redesigned, principally with larger hooks for better handling of internal auto hardware—locks, hinges, window regulators, etc.
- New grease traps were installed to reduce contamination of solutions.
- Checks are made frequently and regularly by Wagner technical men and sales representatives to insure proper balance of solutions.

The changes described above have resulted in improved quality and a complete elimination of Hancock's great problem, the continuous replacement of rectifier stacks. As other problems arise, they are immediately tackled by the Wagner men who check the operation on an average of once a month to cut losses at the source.

So there's the Wagner meaning of "service". Why not call our representative in your area so that you, too, may see Service in Action.

MANUFACTURERS AND PROCESSORS OF ALL METAL-FINISHING CHEMICALS, ANODES, AND EQUIPMENT

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CHICAGO • CINCINNATI • CLEVELAND • INDIANAPOLIS • NEW YORK • SYRACUSE • GRAND RAPIDS

Wagner BROTHERS INC.

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Motor Generators

Principles, Construction

By H. E. HEAD
Stamping Division
Chrysler Corporation
Detroit, Michigan

H. E. Head is past president of the Detroit Branch, A. E. S., and 1st vice president of the American Electroplaters' Society. He has been active in the electroplating industry for many years.

In addition to his work in the A. E. S., Mr. Head serves actively in the following organizations: A. S. T. M. Committee B-8 on Electrodeposition, Society of Automotive Engineers, the Electrochemical Society, the Engineering Society of Detroit, and the Sea Horse Institute.

Part II

Development of the Plating Generator

It may be of interest to give a brief resume of the evolution of generators built specifically for plating in the United States.

Almost all of the generators used in electroplating are shunt-wound.

The earliest machine built for electroplating was the Weston Dynamo. It was first manufactured in 1876. The Weston machine was small, compact, with an abundant current yield. It was what the plater needed, and hence met with pronounced success in this field. At least part of the credit for the sudden development of electroplating and electrotyping in this country can be traced to the introduction of this machine. Some of these generators are still in use.

The next machine that became popular for use in electroplating was the "Little Wonder" dynamo, (Fig. 1) introduced in 1885. In 1889, Hanson & Van Winkle Company began making the "Wonder" dynamo (Fig. 2). It embodied many improvements, but was soon outdated by still more improvements brought out in the Hanson & Van Winkle dynamo and, later, in the New Hanson & Van Winkle dynamo (Fig. 3).

for Electroplating

Historical Review

The greatest improvement introduced by the latter machine was the method of construction used for the field magnets and the frame: they were cast in a single housing. This produced a magnetic field of greater intensity than could be obtained otherwise. It also prevented wasteful induced currents in magnets and pole pieces.

To obtain lower resistance in the magnetic circuit used for this machine, the shape of the circuit was modified, it was made shorter, and a better quality of cast iron was used. To prevent magnetic leakage to the frame, base, or shaft, magnets were supported at some distance from the machine's base.

Another important advance embodied in this machine was automatic voltage regulation. Voltage regulation, as required by varying loads in the plating tank, heretofore had been accomplished by use of resistance rheostats which required constant attention. This machine overcame this difficulty by use of the compound-wound armature. Aside from the convenience of such an arrangement, the automatic regulation also saved on current, since adjustment was immediate, no matter how large or small the load.

A steady current was produced by this machine. It used a drum-type armature, wound by a modification of the Siemens method. The armature was constructed so that it had little idle wire over the heads and it was wound with only one layer of wire.

The necessary voltage in the Hanson & Van Winkle dynamo was secured by revolving a comparatively small number of coils of wire through a powerful magnetic field,

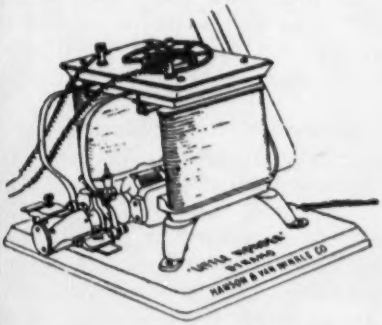

Fig. 1—Hanson & Van Winkle Co. "Little Wonder" dynamo introduced in 1885.

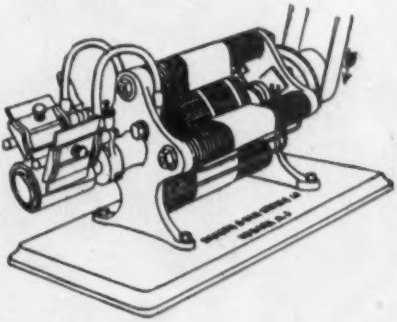

Fig. 2—"Wonder" dynamo (1889) had many improvements, but was soon outdated.

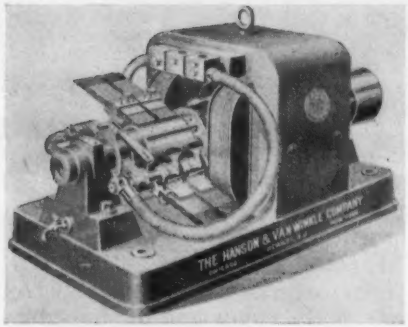

Fig. 3—Hanson & Van Winkle dynamo, built about 1893. (Figs. 1, 2, 3 courtesy Hanson-Van Winkle-Munning Co., Matawan, N. J.)

rather than using a large number of coils in a weak field. The small amount of wire on the armature helped to reduce sparking at the brushes.

The machine ran at a slow speed —it ran at only half the rate of other machines on the market at that time.

Multipolar Dynamos

The multipolar dynamo was the next important step forward in the construction of dynamo-electric machines. It was available in six sizes, from 1000 to 5000 amperes, either shunt- or compound-wound, or with fields wound for separate excitation. The frame and pole pieces were made of steel, the frame being made of a special soft grade that had high magnetic permeability. The field coils were all machine wound, so that more ampere turns could be obtained with less bulk.

These machines were designed so that they could be run continuously at full load, with the rise in temperature over the surrounding atmosphere not exceeding 30 deg. F.

Among the improvements made in the new multipolar type of generator were the following: larger bearings; substitution of steel for cast iron in the magnet circuit, so that a more powerful field and better regulation could be secured; adoption of the slotted form of armature, which aided in producing a field practically free from distortion, with sparkless commutation; increase in the size of the commutators and the brush surface, which helped to increase the output of the machine as well as to ensure cooler running and longer life for both commutator and brushes.

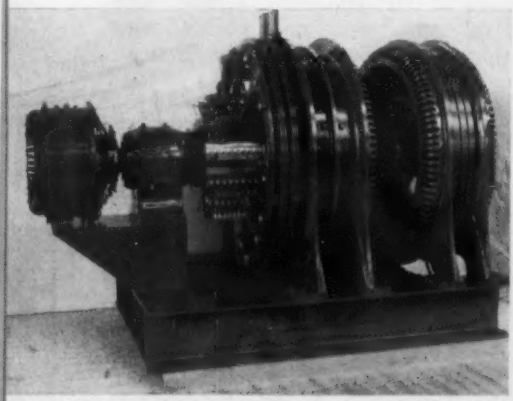

Fig. 4—Chandeysson machine has motor, generator and exciter mounted on same base.

Direct-Driven Generators

In 1905, Zucker, Levett & Loeb Company built a machine with a low-voltage dynamo connected directly to a motor of suitable size, with both the motor and dynamo mounted on a single base. This was a considerable improvement over the belt-driven machine, since there was no loss of power from belt slip-

"Modern generators are designed so that better commutation . . . is secured. Generators are designed for accessibility . . ."

page. This type of construction also put the full capacity of the generator at the disposal of the plater at all times and allowed the machine to be operated without having to run an entire line shaft.

Just after World War I, Dr. Pierre I. Chandeysson developed a line of specialized generators and motor-generator sets. They were slow-speed machines with high efficiency and long life. They have enjoyed wide usage in the plating industry.

Figure 4 pictures a Chandeysson machine, built in the 1940's, of steel construction, consisting of a motor, generator and exciter, mounted on a steel base. This type of machine is a package unit.

In Fig. 5 is shown a Chandeysson multiple machine. It consists of four generators driven by one motor mounted at the far end of the base.

The Electric Products Company, Cleveland, Ohio, entered the generator business in the late 1920's. It has made a number of contributions to make the generator more reliable, easier to maintain, more satisfactory in operation.

By the use of non-magnetic pole spacers, which fit between the main poles and the commutating poles, the problem of securing better commutation was solved.

Modern-day generators are designed so that better commutation is secured. Today's generators are also designed for accessibility — making brush adjustment or replacement easy. Split generator design and construction also aids in simplifying maintenance work. The use of rigid rolled steel structural H shapes in constructing a solid welded steel generator base aids in stability. The generator, driving motor, and exciter can all be mount-

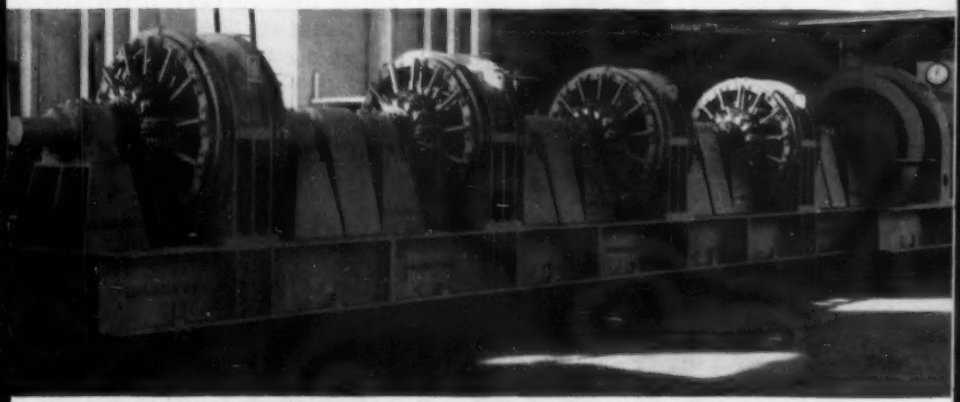

Fig. 5—Multiple motor generator, consisting of four generators driven by a single motor, mounted on base. (Figs. 4, 5 courtesy Chandeyssen Electric Company, St. Louis 16, Missouri.)

ed on the same base (Fig. 6), and proper alignment is not jeopardized by a twisted or shifting foundation.

The present-day generator is designed for slow-speed operation, so that the commutator surface speed can be kept low enough to commutate high currents at low voltages with a low voltage drop. To accomplish these results, the following components are employed:

1. Special low-voltage-drop copper-graphite brushes that have high conductivity, yet lubricate the moving surface. They have a high resistance sideways and low resistance lengthwise of the brush.
2. Highly developed interpole magnetic and winding structures with non-magnetic spacers and micrometer-spaced air-gap.
3. Precision-machined and drilled stationary brush yoke supports to permanently locate brushes in the correct position at the factory.
4. Precision-machined generator frames.
5. Brush yokes that are precisely machined and designed for evenly balanced brush drag and to eliminate vibration or skewing that would adversely affect commutation.
6. Large low-voltage-drop bus rings that are sized the same as the frame to leave clear ventilation air streams.
7. Large, conservatively rated conductors to increase efficiency and lower losses by promoting low voltage drop in armature coils, pig tail extensions, commutating poles, bus rings, terminals, armature risers and commutator bars.
8. Trouble-free equalizer rings to equalize currents around the commutator.
9. Large low-loss bearings that are self aligning.

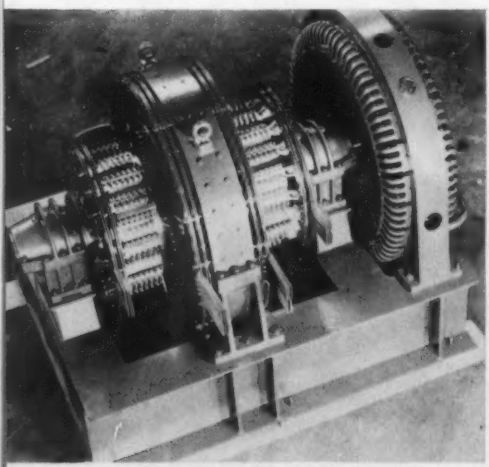

Fig. 6 — H-VW-M motor-generator set with engine-type synchronous motor. Motor and generator are set deeply into the frame, thus providing low center of gravity and eliminating vibration. (Photo courtesy Hanson-Van Winkle-Munning Co., Matawan, N. J.)

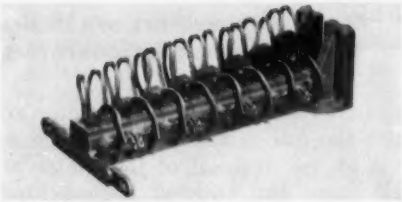

Fig. 7—This modern generator brush holder is rigid with accurately-broached slots. The springs maintain constant pressure.

A Timely Message on

"Finer Products Through Imagination"

by Ben P. Sax

Chairman of the Board, *American Buff Company*

This slogan on the building of a nationally known manufacturer exemplifies for me the spark which ignites the spirit of progress.

IMAGINATION is the creative ability to think of familiar objects, ideas, methods and words from a new standpoint . . . the ingenious adaptation of known elements to new or as yet unrelated applications. The familiar advantages that today we take for granted, just yesterday were "pictures in the mind", often entirely fanciful in their early stages. Yet *they* now offer comparable opportunity for improvement through new imaginative development.

In our own and thousands of other industries, mechanizing some manual action for faster, lower-cost, better-quality production is a constant "mind picture". Countless ingenious adaptations of basic ideas (the wheel, the motor, the connecting element) are pure imagination . . . the "yeast" that makes "dough" in all types of industrial production.

Imagination is a part of every manufacturer's stake in the future. Nurturing this talent, creating an ideal "climate" for imaginative genius, pays off for everybody. It is a way of life with us at American Buff. Our newest mechanization for the metal finishing industry is the "impossible" automation of hand-finishing operations. Our new Uniflex Abrasive Polishing Wheel is a current example of product improvement symbolic of the potential which always exists.

We salute The Bell & Howell Company for its slogan, "Finer Products Through Imagination", symbol of American Industry.

Sincerely,

Ben P. Sax

"For the job that's TOUGH— use an AMERICAN BUFF"

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10. Annealed steel frames for uniform magnetic characteristics—either split or unit construction.
11. Trouble-free insulation system designed to resist chemical fumes, moisture and abrasives.
12. Dynamic balancing, which assures vibrationless operation, hence better commutation.
13. Open, well-ventilated accessible mechanical construction.
14. Precision brush holders that have vernier adjustments for the right pressure and stay at that setting automatically.
15. Large, conservatively-rated, oil-lubricated babbitt-lined sleeve bearings of 2:1 ratio to obtain the lowest friction loss possible.

Another advantageous mechanical feature of modern-day generators is the one-to-one bearing, a bearing whose length along the shaft is equal to the shaft diameter, instead of being two and one-half or three times as long as the shaft diameter. This bearing was developed as a space saver, but it produces an added performance dividend: low temperature rises.

Brush holders have been redesigned to improve rigidness, and slots are accurately broached so as to always maintain free brush movement. Springs have been improved so that they always maintain a constant pressure on the brush—new or used. The rigidness of the brush holder assembly is increased by using links of insulating material to join the brush holder at the free end. These features are illustrated in Figs. 7 and 8.

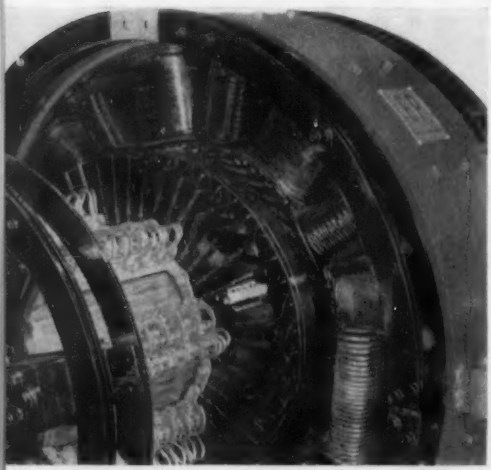


Fig. 8—When the brush holders are assembled on the modern-day generator, the free ends are connected with links of an insulating material to make the entire assembly more rigid. (Figs. 7 and 8 courtesy The Electric Products Company, Cleveland 12, Ohio.)

Recent Developments

One of the latest design changes in generators is enclosing the motor generator set (Figs. 9, 10). This design is known as the "Covered Wagon." It has several advantages. It has always been important to keep air-borne solids away from commutators and brushes. In modern plating rooms, it is just as important to keep the high-metal-content dust of the generators away from bright plating solutions. The covered wagon type of construction accomplishes both objectives by filtering both incoming and outgoing air streams through oil-soaked glass fibre dust blocks.

How to Select a Generator

A manufacturer of generators can tell you the best machine for your needs if he has the necessary infor-

Photo courtesy Dovron Coating Corp., Paterson, N. J.

Which plastisol is hooked to savings?

Unichrome Coating 218X, of course!

NOBODY ARGUES that use of a protective vinyl plastisol coating on racks, screens, even anode hooks can cut maintenance costs. Economy-wise platers who know plastisols through long experience are also in agreement on *which* to use. Some have been using Unichrome Coating 218X for 10 years overall. Some have seen it survive 6 years in daily use! They've found that *using the best quality at the outset saves money in the long run.*

Non-contaminating Coating 218X withstands harshest plating and cleaning cycles, even those with vapor degreasing cycles. It won't chip, tear, blister. An experienced firm nearby can apply it for you, if you prefer . . . ask us for names.

First name in plastisols for all plating purposes . . .

UNICHROME

METAL & THERMIT
CORPORATION
General Offices: Rahway, New Jersey
Atlanta, Pittsburgh, Detroit, E. Chicago, Los Angeles
In Canada: Metal & Thermit-United Chromium of Canada, Limited, Rexdale, Ont.

For more data circle 332 on Postpaid Card

"The motor-generator of today is efficient, dependable, sturdy, and will take overloads and abuse without failure."

mation. You can help him by submitting the following data:

1. Variety, size and number of baths to be served.
2. What kind of metal is being plated and how much surface area will be in the tank at one time.
3. Whether or not the tank load will vary appreciably.
4. Distance of the generator from the plating tank.
5. Power available to operate the motor, i.e., voltage, phase, etc.
6. Whether or not synchronous motors are desired.
7. Whether or not separate excitation is desired.

The motor-generator of today is efficient, provides corrective KVA at no extra cost, requires little maintenance, is dependable and sturdy, and will take overloads and abuse without failure.

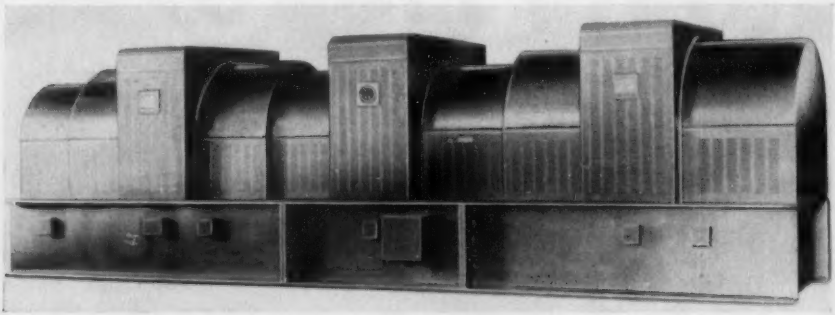


Fig. 9—This enclosed motor-generator installation is in a large automotive plating plant.

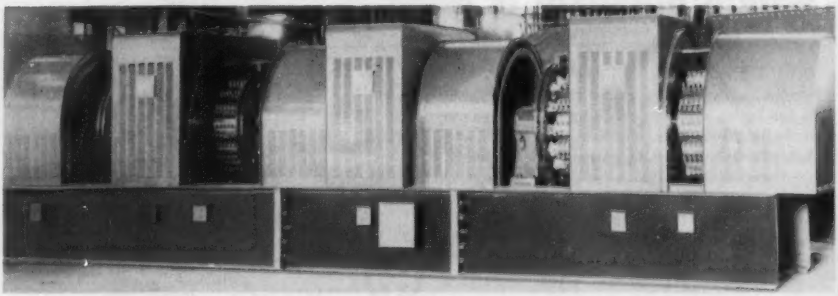
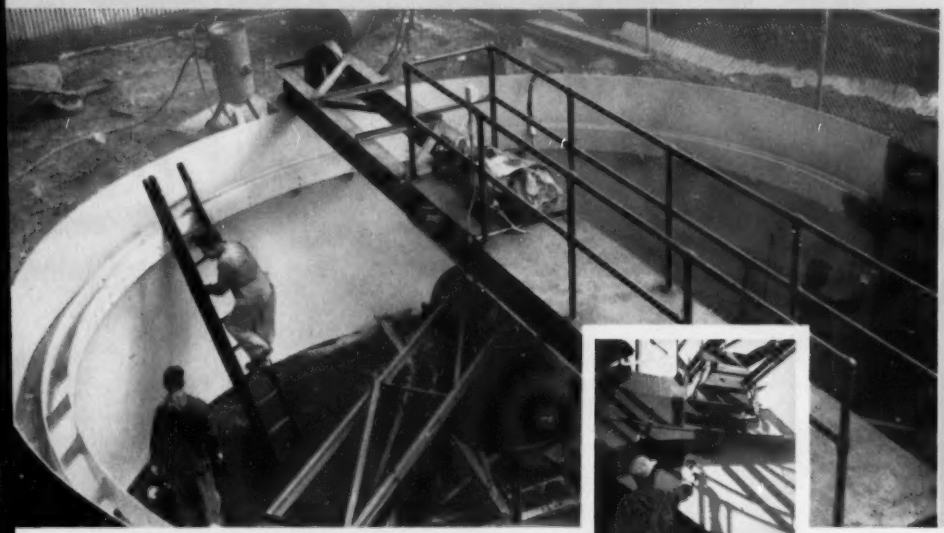


Fig. 10—Generator covers on enclosed generator slide back easily for brush and commutator inspection. (Figs. 9, 10 courtesy Hanson-Van Winkle-Munning Company, Matawan, N. J.)

EPON® RESIN does it!

Protects steel clarifier from corrosive chemical wastes



The Epon resin-based Porselon finish will deliver many years of maintenance-free protection from corrosion and abrasion.

Steel clarifier at Trubek Laboratories is quickly coated with Porselon, an Epon resin-based paint, for maximum protection against corrosive acids.

Here's how:

help solve stream-pollution blems, Trubek Laboratories, , East Rutherford, New Jersey, alled a treatment plant to neu- ize corrosive waste water from manufacture of its more than chemical products.

n integral part of the system uded a huge clarifier. Trubek neers knew that metal-eating s would soon disable the clari- s steel components. Based on successful use as a high-per- nance protective coating on ctural steel and machinery, bek chose Porselon, an Epon resin-based paint made by Protex-A-Cote, Inc., Newark, N. J., to combat these corrosive conditions.

TIME: Fall of 1956. *METHOD:* Three coats of Epon resin-based Porselon were applied over an undercoat of zinc chromate Epon resin-based primer to form a 5-mil thickness. *RESULT:* An incredibly tough, acid-resistant surface which combines the advantages of a rugged baked film with the convenience of air drying. Porselon is easily applied with a brush, roller or conventional spraying equipment.

If you have a coating problem, an Epon resin-based formulation may be your answer. Its outstanding abrasion- and chemical-resistance makes it an ideal all-purpose industrial coating.

Call on Shell Chemical sales offices for names of suppliers. And write for the full Epon resin coatings story, "Planning to Paint a Pyramid?" You'll find it interesting and valuable.

Epon resins are the epoxy polymers made exclusively by Shell Chemical Corporation.

SHELL CHEMICAL CORPORATION

CHEMICAL SALES DIVISION, 380 Madison Avenue, New York 17, New York

Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco • St. Louis

IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver

SHELL

For more data circle 333 on Postpaid Card

NEW BOOKS

A Study of Cadmium-Tin and Zinc-Tin Alloy Electrodeposits. By B. Cohen, Wright Air Development Center. 44 pages. Price, $1.25. (Order PB 121808 from Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

Cadmium-tin electrodeposits were found superior to coatings of cadmium in both corrosion resistance and embrittling effects. The alloys evaluated were deposited from fluoborate solutions. Cadmium was used for comparison. The cadmium-tin coating showed excellent resistance to salt spray, jet fuels, high temperature synthetic oils, and organic acid vapors. The coating had little embrittling effect on steel as compared to cadmium plated from a cyanide solution. It was easily soldered by the same techniques used for cadmium. Zinc-tin alloy coatings were inferior in all tests to those of both cadmium and cadmium-tin.

★ ★ ★

INDUSTRIAL EQUIPMENT CATALOG. A 44-page catalog describing air-powered Powerflo reciprocating pumps and equipment for paint circulating systems, viscous material transfer, extrusion applications and spraying has been announced by **Gray Co., Inc.,** 1045 Sibley St., N.E., Minneapolis, Minnesota.

The No. 453 Catalog illustrates and describes air-powered Powerflo pumps for pumping directly from original containers practically every pumpable material from light fluids to the most viscous mastics. Four complete series of pumps in varying power ratios are available to meet all pressure and volume requirements.

ABRASIVE CHIPS AND TRIANGLES. Literature on "Tumbrade-40" Abrasive Chips and Triangular Media. "Tumbrade - 40" was developed for precision, mass-production barrel finishing of ferrous and non-ferrous castings, die castings, steel forgings, and screw machine parts.

Describes the abrasive characteristics of "Tumbrade-40," provides complete specifications, and explains the product's advantages. Write Dept. 25, **Macklin Company,** Jackson, Michigan.

★ ★ ★

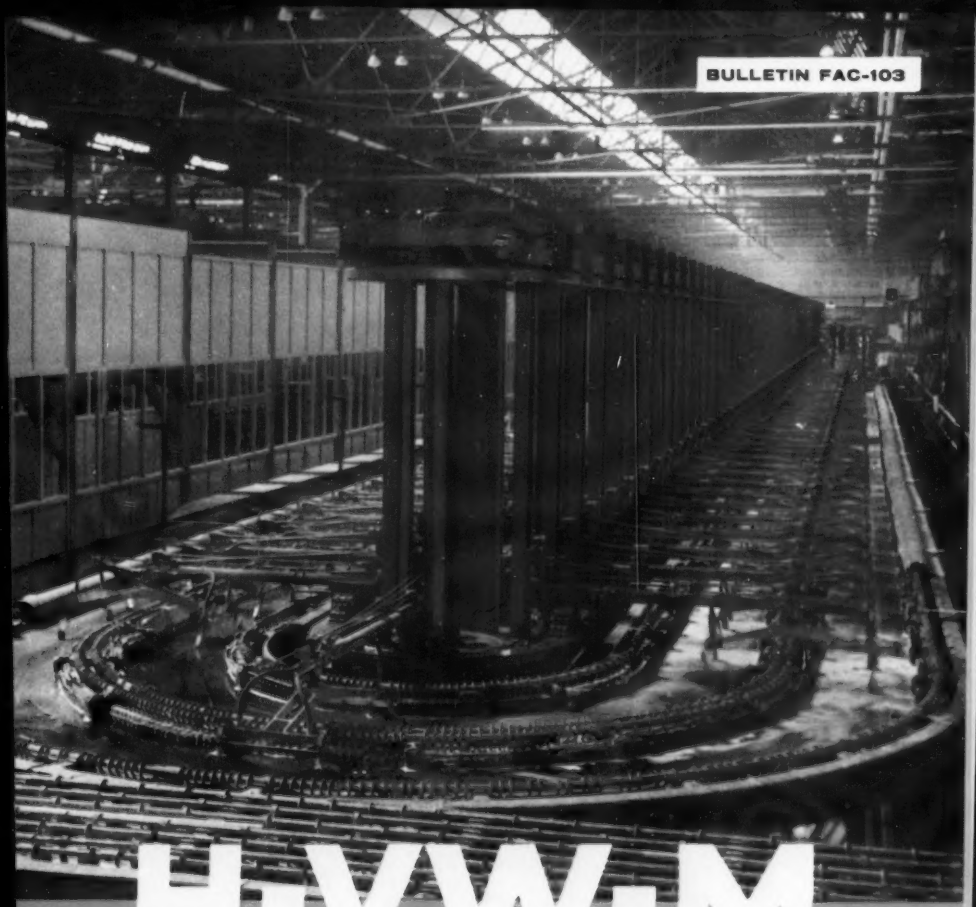
The Industrial Chemistry, Properties, and Applications of Silicones. By Charles E. Reed. Given as the Thirtieth Annual Edgar Marburg Lecture, before the 1956 Annual Meeting of the American Society for Testing Materials. 47 pages. Copies may be obtained from the American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. Price, $1.50.

★ ★ ★

SPRAY EQUIPMENT. A complete DeVilbiss Service manual totalling 405 pages and containing a full parts list as well as general information on installation, operation and maintenance is now available from **The DeVilbiss Company,** Toledo 1, Ohio. Price, $2.50, net, FOB, Toledo.

Compiled at the request of resale outlets, the new manual provides up-to-date literature and reduces errors in ordering material and service parts. It replaces previous manuals which were kept current by the periodic mailing of replacement pages. Although replacement sheets will be available when requested, the company now plans to issue a new volume whenever sufficient changes accumulate to make it necessary.

For more data circle 334 on Postpaid Card——



BULLETIN FAC-103

H-VW-M

FULL AUTOMATIC CONVEYORS

Presenting the story of growing automation in mass-production finishing . . . electroplating, anodizing, metal cleaning, phosphating, stress relief and pickling

H-VW-M

HANSON-VAN WINKLE-MUNNING COMPANY

MATAWAN, NEW JERSEY

PLANTS: Matawan, New Jersey • Grand Rapids, Michigan

SALES OFFICES: ANDERSON (IND.) • BALTIMORE • BELOIT (WISC.) • BOSTON • BRIDGEPORT • CHICAGO CLEVELAND • DAYTON • DETROIT • GRAND RAPIDS • LOS ANGELES • LOUISVILLE • MATAWAN • MILWAUKEE NEW YORK • PHILADELPHIA • PITTSBURGH • PLAINFIELD (N. J.) • ROCHESTER • ST. LOUIS • WALLINGFORD (CONN.) WEST SPRINGFIELD (MASS.) • UTICA

ADAPTABLE H-VW-M FULL AUTOMATIC CONVEYORS BRING

Automation

to every production application requiring automatic cycling of individual treatments through tanks . . . including:

ELECTROPLATING • ANODIZING • METAL CLEANING
PHOSPHATING • STRESS RELIEF • PICKLING

Today's increasingly automated metal-finishing places a real premium on the operational flexibility, broad application range, and engineered precision of all equipment used.

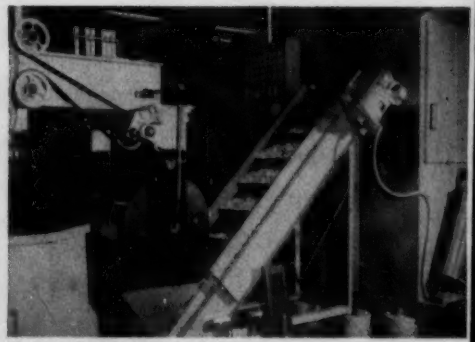
Recognizing this, H-VW-M design engineers have placed special emphasis on the development of equipment with features that permit fast, flexible, automated processes in metal finishing.

One such development is the H-VW-M Dial-A-Cycle system, which allows nine or more anodizing and plating operations to be carried out automatically, all under the control of one operator.

The pictures on these pages tell the story of the broad applicational scope of H-VW-M Full Automatic Conveyors. On page four are several illustrations showing how H-VW-M Dial-A-Cycle and Automatic Load-Unload have speeded up some large-scale plating and anodizing operations. These installations represent the way all H-VW-M equipment meets the requirements of modern industry.

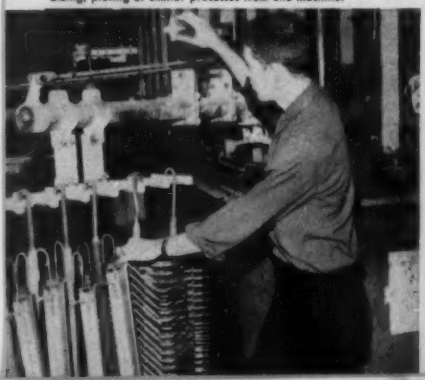
H-VW-M equipment:

FLEXIBLE . . .
VERSATILE . . .
EFFICIENT . . .



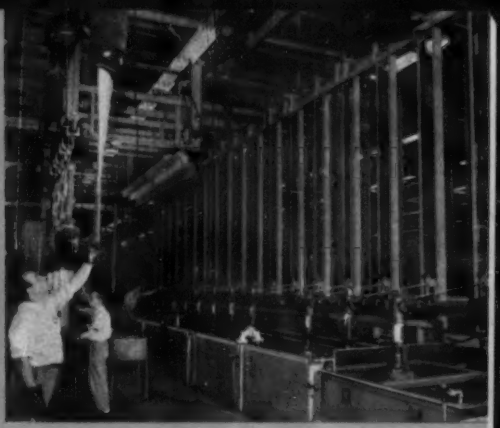
Automatic cadmium plating for small parts . . . screws, nuts and bolts . . . is done with this H-VW-M barrel plater, which turns out five tons of work an hour at maximum load. Barrel (at left) tilts, dumps finished parts into elevator to hopper dryer.

Anodizing goes automatic with this H-VW-M Dial-A-Cycle machine, installed at a leading refrigerator plant. The system has been used to control as many as nine different coloring, anodizing, plating or similar processes from one machine.

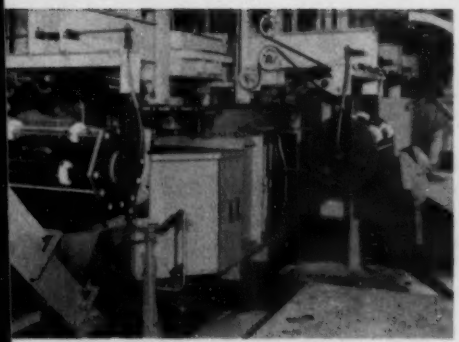


For bulky loads . . . this high-lift, full-automatic conveyor handles clumsy, tubular steel furniture frames with ease. Notice the long arms, with adequate spacing between them to accommodate the bulkiest and most irregular shapes.

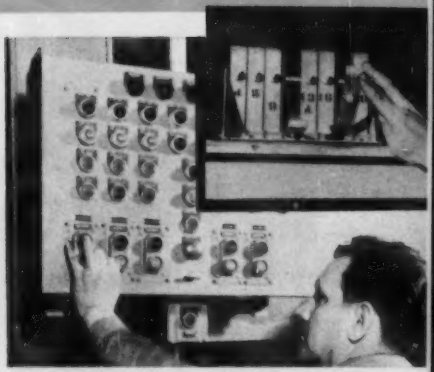
from the largest to the smallest . . . in processing die castings in the automotive industry, this full automatic plating conveyor takes 'em all. One machine like this has an operating solution capacity of 84,000 gallons—one of the world's largest for a single unit.



highest lift . . . for a return type conveyor, raising 300-lb. steel propeller blades a full ten feet during zinc plating cycle. To obtain correct blade balance and heavy zinc deposit, the blade transfers automatically to auxiliary conveyor chain for required recycling and automatic reload.

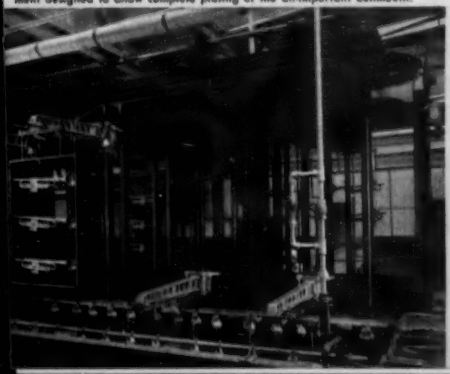


Compact arrangement of loading barrel (right) and unloading barrel (left) puts both within easy reach of operator. Raw parts come to machine in cans via roller conveyor, are dumped into storage hopper, then precision-portioned into weighing hopper for transfer to barrels.

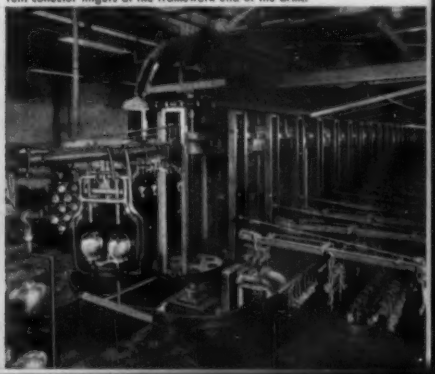


Push-button panel sets all power requirements for tanks. Course of the machine's 30 barrels is governed by setting these "flags" (inset) which will contact limit switches at various tanks to bypass certain functions.

Variable load capacity . . . is an essential when the same machine handles musical instruments of all shapes and sizes. Note the interior anode arrangement designed to allow complete plating of the all-important bellmouth.



Plating versatility . . . is the answer to the plating requirements of these attractive modern coffee makers. Like many other hollow-ware appliances, they are plated inside and outside by separate circuits. Notice the internal anode feature on the racks, and current collector fingers at the framework end of the arms.

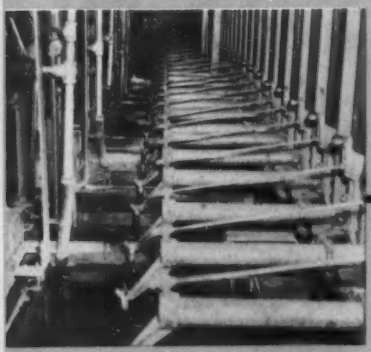


DIAL-A-CYCLE

makes automatic metal-finishing more *flexible* than ever!

This dial is located on the carrier arm which moves parts through processing tanks. Simply by setting the dial, you predetermine the sequence of processing steps through which the work is to be moved. Automatic conveying does the rest, lowering parts into the correct series of tanks, and bypassing others, according to the dial setting.

The system operates by an arrangement of limit switches and solenoid-actuated setdown flippers. These control the selective action of the carrier. Different dial settings simply change the position of a "flag," which will pass or contact switches and flippers at each tank in the finishing sequence.



This anodizing machine uses new H-VW-M Dial-A-Cycle bypass mechanism. Operator sets dial at start of cycle. Carrier then automatically lowers parts into tanks, bypasses others by means of switches that contact dial at each tank.

AUTOMATIC LOAD-UNLOAD

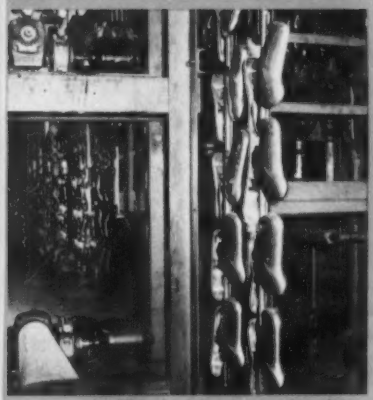
doubles production rate . . . one machine can do the work of *five!*

Serious bottlenecks caused by manual handling of heavy metal parts are completely eliminated when a processing conveyor is equipped with Automatic Load-Unload at transfer points. H-VW-M Automatic Load-Unload is a rugged, foolproof system that handles whole carriers racks of heavy parts – loading and unloading on the same indexing sequence as the electroplating conveyor. All controls are located in a centralized panel, permitting integrated automatic operation of elements in the finishing process.

One manufacturer of automotive parts reports almost a 50% jump in production per eight-hour shift since installation of H-VW-M Automatic Load-Unload. One set of finishing machinery is now doing the work previously done by five, and output per man has been boosted by more than *five times* the former rate.

Automatic Load-Unload permits greater production goals to be met with no overloading or loss of quality.

H-VW-M designs, manufactures and installs many other types of conveying equipment for metal finishing. We invite you to write for more information on the time and cost saving advantages of H-VW-M Automatic Conveyors and allied equipment.



Load-Unload unit in action . . . electroplating conveyor is in background. Loader has just removed two racks of plated auto bumper guards from the plating machine, and loaded two racks of raw work. Afterward, loader will shuttle in reverse, transfer plated parts to conveyor monorail, come back to deliver new load of raw parts to plating machine—all automatically.

IN-PROCESS FLEXIBILITY

With the H-VW-M equipment described on these pages, many in-process variations are easily made. You can –

- Adjust the process
- Adjust conveyor parts
- Adjust the work
- Adjust the carriers

– Right on the job!

H-VW-M

HANSON-VAN WINKLE-MUNNING COMPANY

MATAWAN, NEW JERSEY

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4994

Printed in U. S.

ACETATES Amyl, Normal Butyl, Secondary Butyl, Ethyl, Isopropyl, Normal Propyl

ALCOHOLS Normal Butyl, Secondary Butyl, Isopropyl, Methanol, Proprietary Ethyl Alcohol, Normal Propyl

ALKALIES Caustic Soda, Trisodium Phosphate

ALKANOLAMINES Diethanolamine, Di-Tri-Isopropanolamine, Monoethanolomine, Monoisopropanolamine, Triethanolomine

AROMATIC SOLVENTS Benzol, Toluol-Xylol, Heavy Aromatic, SC Solvents #1, 2, 3, 28, 100, 150, and 450

CHLORINATED HYDROCARBONS Carbon Tetrachloride, Chlorothene, Ethylene Dichloride, Methylene Chloride, Orthodichlorobenzene, Perchlorethylene, Propylene Dichloride, Trichlorethylene, Trichlorobenzene

ALL UNDER ONE ROOF

to give you fast, convenient service

GLYCOLS Diethylene, Dipropylene, Ethylene, Propylene, Triethylene, Tripropylene

KETONES AND ETHERS C. P. Acetone, Diacetone, A.F. Methyl Acetone, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Ethylene Glycol Ethers, Propylene Glycol Ethers

NAVAL STORES Dipentene, Pine Oil, Turpentine, Gum & S.D.Wood, Rosins, Gum & Wood, Modified Rosins, Resinates

ALIPHATIC-HYDROCARBONS Heptane-Hexane, Mineral Spirits, Odorless Mineral Spirits, Benzene (VM&P) and other standard and custom Aliphatic-Naphthas.

OILS AND FATTY ACIDS Linseed Oil, Tallol, Tallol Fatty Acids

STEARATES Aluminum, Barium, Calcium, Iron, Lead, Manganese, Magnesium and Zinc

WAXES Emulsifiable, Dip Wax, Paraffin, Plastic Waxes, Sugar Cane Waxes

OTHER PRODUCTS Plasticizers, Weed Killers, Anti-Freeze, Chlorinated Paraffin

See, call, or write your local member listed below!

Bulk plants located at Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Grand Rapids, Houston, Indianapolis, Kansas City, Louisville, Milwaukee, New Orleans, St. Louis, Toledo and Windsor, Ontario, Canada.

Look for the SC seal in the "Yellow Pages" of your directory under the "Solvents" or "Chemicals" listing. Or write:

THE SOLVENTS AND CHEMICALS GROUP
2540 West Flournoy Street • Chicago 12, Illinois

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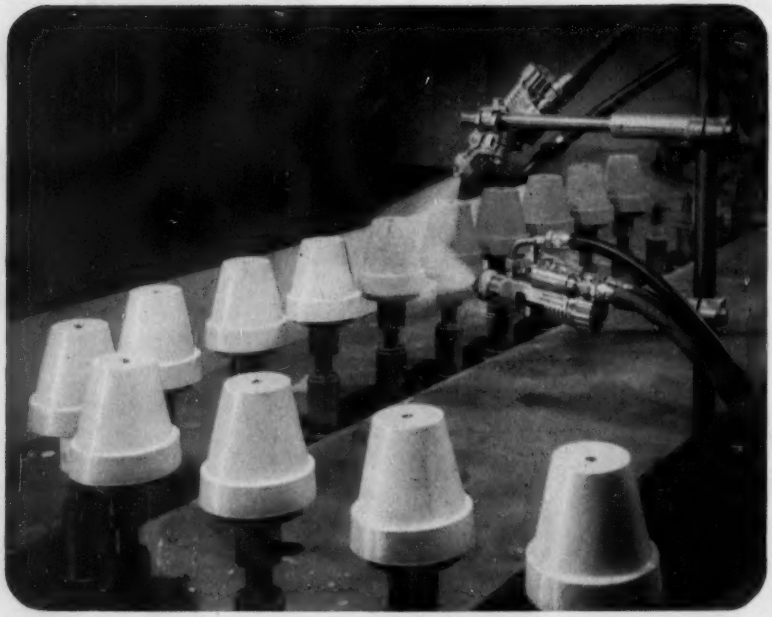
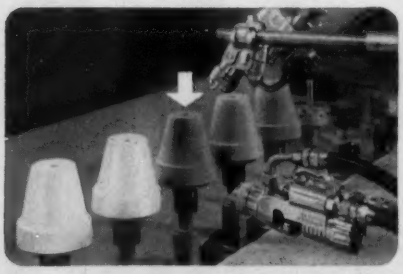
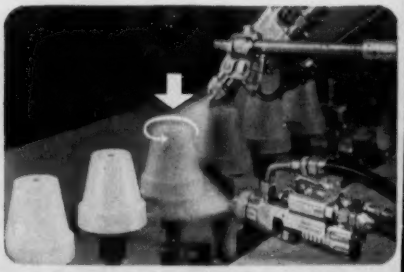
DeVilbiss automatics end



1 DeVilbiss automatic applies a flawless, uniform finish to flower pots at the rate of 3600 an hour. Spray cycle is synchronized with conveyor travel.



2 With spindles six inches apart, chain-on-edge conveyor moves pots into position.



3 At precise instant, two guns spray with overlapping patterns; pot revolves three times.

reject problems . . .

once and for all!

Just load your product on a high-speed DeVilbiss spray machine, and reject problems are gone forever! Split-second timing, accurate gun positioning, and synchronized conveyor speeds prevent streaks, sags, and wasteful overspray. You actually *save* materials, as you produce consistently better finishes in a fraction of the time consumed by manual methods.

Test run shows how you save

DeVilbiss offers automatic spray machines for painting products of practically any size or shape, and for use with most conveyor systems. To have us run a test on your product and report savings *before you invest a cent*—send us full data about your product, coating applied, number of coats, and production rate desired.

THE DEVILBISS COMPANY

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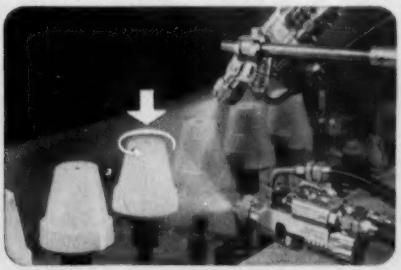
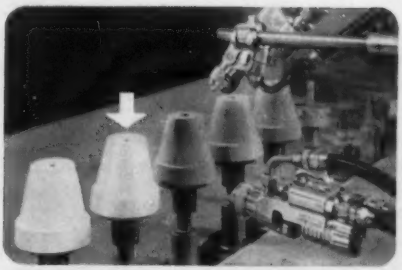
DEVILBISS



4 Painting takes one-half second. If spindle is empty, machine skips it; guns don't spray.



5 Finished pot moves as next one takes position. Total cycle only lasts one second.

For more data circle 336 on Postpaid Card

Link Aviation Installs New, Modern Plating Facilities

By CHARLES O. HARRIS
Foreman, Inorganic Finish Department
Link Aviation, Inc.
Binghamton, N. Y.

LINK AVIATION, INC., of Binghamton, N. Y., has recently installed a new inorganic finishing department, incorporating the latest equipment and an efficient, space-saving layout. The new facilities are used for finishing components of aircraft simulators made by Link Aviation.

The equipment in this installation is designed to give maximum production with a minimum of floor space and equipment. It's built to be neat and clean, and to be easy to keep that way. Modern tanks corrosion-proofed with acid-resistant coatings are mounted over a steel-grate floor that keeps feet dry. Under the grate are acid-resistant tile drainage trenches. An efficient exhaust system sucks out corrosive fumes from around the plating tanks before they can irritate workers or corrode equipment. The plating tanks and exhaust system were installed by the Udylite Corporation, Detroit, Michigan.

The mechanical cleaning and finishing section of this installation includes equipment for sandblasting, tumbling and burnishing, as well as three polishing lathes equipped with double wheels.

Chemical cleaning and pretreatment facilities include equipment for vapor degreasing; soak-tank cleaning; electrolytic cleaning; deoxidizing; acid pickling; bright dipping; and acid dipping for removal of smut from metal surfaces.

Complete cycles are provided for plating various base metals with copper, cadmium, nickel and silver. Nickel plating is a typical example of the plating performed in this plant. It is done as follows: electrolytically clean; rinse in cold water; pickle steel or bright dip nonferrous metals; rinse in cold water; "flash" plate with copper; rinse in cold water; nickel plate; rinse in cold water, then in hot water; dry in forced-steam oven.

Other protective and decorative finishes are also being applied here. The plant is set up for chromic acid anodizing, for instance. A 40-volt generator with automatic programming equipment provides an accurately timed current supply for this type of finishing.

Chromate coatings are applied to aluminum. This type of finish can be used as a paint base or as a final finish, if abrasion resistance is not important.

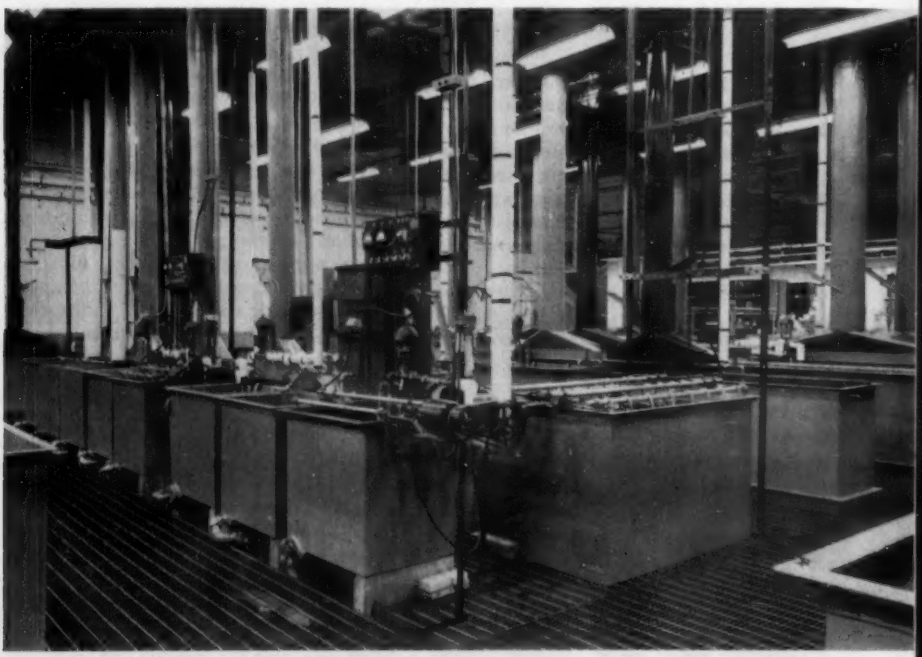
Zinc phosphatizing of ferrous metals is performed to provide a corrosion-resistant base for organic finishes to be applied subsequently in the plant's painting section.

Black oxide finishes are applied as final finishes. These finishes also make a good base for organic finishes on ferrous and non-ferrous metals.

Immunizing is performed to provide a protective, passive film on stainless steel.

Manufacturing Processes, 4th Edition. By Myron L. Begeman. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. 612 pages. Price, $8.00.

This book is written to provide basic knowledge of materials and processes to be encountered in industry, as well as some information on manufacturing operations. It provides a comprehensive survey of manufacturing materials and processes. It can be useful to the student as well as to the practicing engineer or industrial worker who wishes to review some specific process. The book stresses principles and materials. Advantages and disadvantages of the process are examined. This edition includes descriptions of several new topics, including electroforming, metal coating processes, chem-milling, and automation.



A general view of the new electroplating department recently installed at the main plant of Link Aviation, Inc., Binghamton, N. Y. (Photograph courtesy Link Aviation, Inc.)

SPECIAL REPORTS ON FINISHING NON-FERROUS METALS

NUMBER I—
Decorative, Corrosion-Resistant Finishing with Iridite

Chromate conversion coatings are well known and accepted throughout industry as an economical means of providing corrosion protection, a decorative finish or a good paint base for non-ferrous metals. However, continued developments are so rapid and widespread that many manufacturers may not be completely aware of the breadth of application of this type of finish. Hence, this digest of current information; to bring you up to date on the many ways in which you can combine salable appearance with durability in one finish at a competitive price advantage. Report II on paint base, corrosion-resistant finishes and Report III on chemically polished, corrosion-resistant finishes are available on request.

First, as a basis for this discussion, a "decorative" finish is considered as any chromate film that is used as a final finish in itself. It may be truly decorative in that its sole purpose is to enhance the beauty of the product. For example, a bright chrome-like finish or a pleasing bronze appearance are among the many effects that can be obtained. It may be functionally decorative in that it reduces reflectivity for camouflage purposes or provides a means of color-coding parts. But, in all cases, the Iridite films protect the metal against corrosive attack.

Iridite finishes are now available for all commercial forms of the more commonly used non-ferrous metals, including zinc, cadmium, aluminum, magnesium, silver, copper, brass and bronze. These films can produce a wide variety of pleasing appearances. The basic colors of the Iridite coatings are grouped below by metals.

ZINC and CADMIUM: Metallic bright, light iridescent, iridescent yellow, bronze, olive drab.

COPPER, BRASS, BRONZE: Metallic bright, yellow.

ALUMINUM ALLOYS: Clear, iridescent yellow, brown.

MAGNESIUM ALLOYS: Light brown, dark brown, black.

SILVER: Metallic bright.

In addition, many films can be modified by bleaching or by dyeing. Among the dye colors available are various shades of red, yellow, green, blue or black.

(ADV.)

WHAT IS IRIDITE®?

Briefly, Iridite is the tradename for a specialized line of chromate conversion finishes. They are generally applied by dip, some by brush or spray, at or near room temperature, with automatic equipment or manual finishing facilities. During application, a chemical reaction occurs that produces a thin (.00002" max.) gel-like, complex chromate film of a non-porous nature on the surface of the metal. This film is an integral part of the metal itself, thus cannot flake, chip or peel. No special equipment, exhaust systems or specially trained personnel are required.

Depending upon the metal and the Iridite used, corrosion resistance of clear and bright films ranges from mild passivity to as high as 500 hours in salt-spray; on heavier dark films, salt-spray resistance ranges from approx. 100 to 1000 hours.

It is this combination of decorative and corrosion resistant properties that accounts for the widening use of Iridite finishes.

For example, Iridites #4-73 and #4-75 (Cast-Zinc-Brite) make possible for the first time, a combination of lustrous chemical polishing of the as-cast surface of zinc die castings and good resistance to corrosion. Further, in many cases, sizeable savings in the cost of buffing and electroplating are realized.

On many steel parts, a simple system of zinc or cadmium plate and bright Iridite is used instead of more costly electroplated finishes to provide a bright, decorative and protective finish with tremendous savings in material, equipment and labor.

In finishing aluminum, where corrosion resistance or paint adherence is the prime consideration, the aircraft industry has all but abandoned the anodizing process in favor of recently developed chromate conversion coatings, among them Iridite #14 and #14-2 (Al-Coat). These formulations and their method of application can be varied to retain the original metallic appearance while providing acceptable corrosion resistance, or to produce a fully colored brown finish that offers exceptional corrosion protection. Again, time and manpower savings are astounding—one company saved at least $15,000 a year on maintenance of racks alone and another $40,000 on materials and labor in only nine months. In addition, of course, hundreds of thousands of dollars are saved by eliminating the need for expenditures for generators, heating equipment and racks.

Iridites are widely approved under both Armed Services and industrial specifications because of performance, low cost and savings of materials and equipment.

In planning or designing, you should consider the many other characteristics of Iridite finishes which may enter into the specific problem. In addition to having decorative and protective functions, these chromate coatings form an excellent base for organic finishes and bonding compounds. They have low electrical resistance. Some can be soldered and welded. The film itself does not affect the dimensional stability of close tolerance parts.

You can see then, that with the many factors to be considered, selection of the Iridite best suited to your product requires the services of a specialist. That's why Allied maintains a staff of competent Field Engineers—to help you select the Iridite to make your installation most efficient in improving the quality of your product. You'll find your Allied Field Engineer listed under "Plating Supplies" in your classified telephone book. Or, write direct and tell us your problem. Complete literature and data, as well as sample part processing, is available. Allied Research Products, Inc., 4004-06 E. Monument Street, Baltimore 5, Maryland.

For more data circle 337 on Postpaid Card

Page 72

New Equipment, Materials, Processes

Polishing, Buffing, Degreasing, Cleaning, Barrel Finishing, Plating, Anodizing, Phosphatizing, Baking, Vacuum Metalizing, Chromate Coatings, Paint Finishing, Waste Treatment

Cleaner-Control Kit

A kit for controlling alkaline cleaning baths has been introduced by Apex Alkali Products Company.

The kit is said to provide a simple means of checking concentrations of alkaline cleaning baths. Further information on this product may be obtained by writing to Apex Alkali Products Co., Main & Rector Sts., Philadelphia 27, Pa.

For more data circle 1 on Reader Service Card

Plating-Conveyor Unloader

An unloader especially designed for automatic plating machines by Wagner Bros., Inc., 400 Midland, Detroit, Mich., automatically unloads small parts from a plating conveyor and drops them onto a belt conveyor.

Working somewhat as a "see-saw," with its arms making a 120-degree arc, the unit grasps and removes a rack-load of parts as they come from

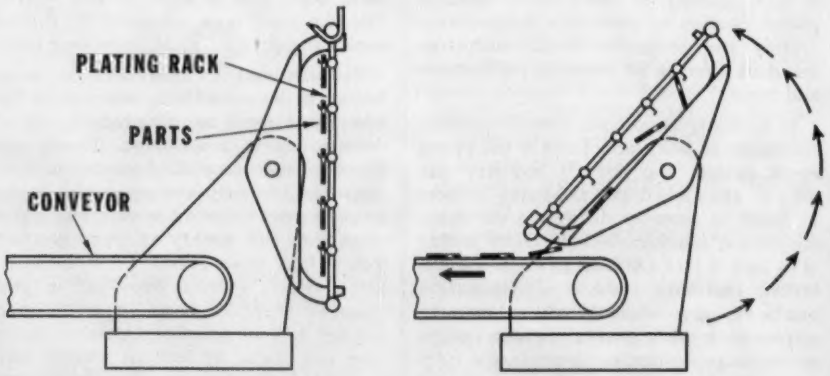


Diagram of unloader shows how rack load of parts is transferred from automatic plater, left, and pivoted through 120-degree arc so that plated parts drop onto the conveyor belt.

Now... a water-based strippable spraybooth coating!

LIQUID ENVELOPE #15-10 EMULSION

Stuck with costly, primitive, scrape-down booth-cleaning because of union, health or fire regulations? Because soap solutions won't work?

Now you can cut booth-maintenance costs to the bone with Liquid Envelope #15-10 EMULSION. This water-based coating is non-toxic, has a mild odor, and the solution can't burn.

Reduce costly overtime and non-productive down-time. Order a 5-gallon test sample at the drum-lot price today!

#15-10 EMULSION is one of three formulations for use under other-than-ordinary operating conditions. When special properties are *not* required, we recommend . . .

LIQUID ENVELOPE #49-5396-2
H. D. ECONOMY
. . . used world-wide for over 10 years.

BETTER FINISHES & COATINGS, INC.
268 Doremus Ave., Newark 5, N. J.

For more data circle 338 on Postpaid Card

Gentlemen:

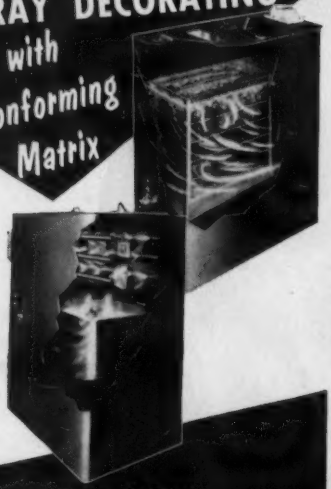
Please send me a 5-gallon test-sample of Liquid Envelope #15-10 EMULSION and bill me at the drum-lot price.

NAME_____

COMPANY_____

ADDRESS_____

GET AHEAD
Stay Ahead in Your
SPRAY DECORATING
with
Conforming
Matrix



Originators of efficient explosion-proof
AUTOMATIC
MASK WASHERS
• The fastest made • Increase production with fewer tools • Eliminate damage and costly repairs of masks • Lowest solvent consumption • High pressure, no-leak pump • Send prints or sample parts, giving production requirements and results you wish to achieve.

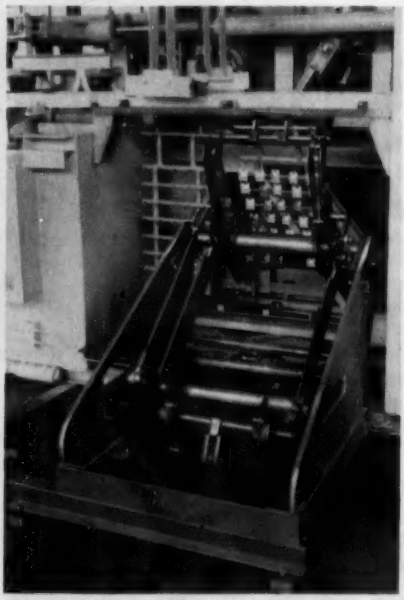
Manufacturers of all the equipment needed to equip you with the most practical system for handling your particular projects most efficiently. We maintain a trained engineering staff familiar with all types of materials, translucents, teflon and metallics, and with knowledge of die casting, stamping and plastic molding procedures as they relate to high production spray finishing.

Conforming Matrix
CORPORATION
356 Toledo Factories Building
Toledo 2, Ohio

For more data circle 339 on Postpaid Card

the drying station, tilts the load forward, and deposits the small parts onto a moving conveyor belt. The rack is then returned to the automatic plating machine for its trip to the loading station via the stripping and rinse baths.

The unit can be synchronized with



Wagner Brothers Unloader. Cover that guides parts to conveyor has been removed.

any cycle of the automatic plating machine, the company states. It is adaptable to most machines now in use.

For more data circle 2 on Reader Service Card

★ ★ ★

Decorative Spray

Developer: "Freon" Products Div., E. I. du Pont de Nemours & Co., Inc.,

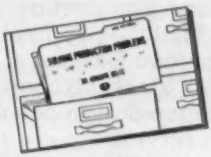
HOW WOULD YOU
SOLVE IT?

PRODUCTION PROBLEM: To cut unit costs and increase production of grinding off parting lines and other imperfections, and polishing die-cast aluminum vacuum cleaner nozzles prior to plating. Scott and Fetzer Co., makers of famous Kirby vacuum cleaners, were using set-up wheels in a three-grit sequence – #60, #120, #220 – to do this operation. Production was 6 finished units per hour.

SOLUTION: A 3M Representative suggested that this Cleveland, Ohio manufacturer switch to the 3M Method using Three-M-ite Cloth Belts, Grits #120 and #220. This method increased production 116% – from 6 to 13 finished nozzles per hour – *and* eliminated one grinding operation! Too, the finer polished surface obtained with 3M Belts made for far superior final plating.

A 3M Representative can help solve *your* grinding and finishing problems, too. His services are available without cost or obligation. Call him today!

Write Minnesota Mining and Mfg. Co., Dept. FH-127, St. Paul 6, Minn., for FREE copy of booklet *"Case History Reports on 3M Abrasive Belts."*



3M ABRASIVES

Made in U.S.A. by Minnesota Mining and Mfg. Co. General Offices: St. Paul 6, Minn. In Canada: P.O. Box 757, London, Ontario. Export Sales Office: 99 Park Avenue, New York City.

PRODUCT OF 3M COMPANY RESEARCH

For more data circle 340 on Postpaid Card

Wilmington, Del. To be made and marketed by aerosol loaders.

Description: An aerosol spray that can be used as a decorative finish on wood and paper indoors and as an easily removable finish on metal and glass.

Characteristics: The clear film formed will not soften or run away under ordinary conditions to which non-permanent signs are exposed, yet it can be removed easily from metal or glass by wiping with a damp cloth. On paper, wood and similar absorbent materials, the film is absorbed evenly and cannot be removed easily by washing. This product is available in many colors.

Application Procedure: Spray from aerosol container. Air dries quickly to a tack-free, clear film.

Typical Applications: For use as a temporary sign-painting material and in places where other less easily removed decorative coatings, such as paints and inks, cannot be used for fear of soiling.

For more data circle 3 on Reader Service Card

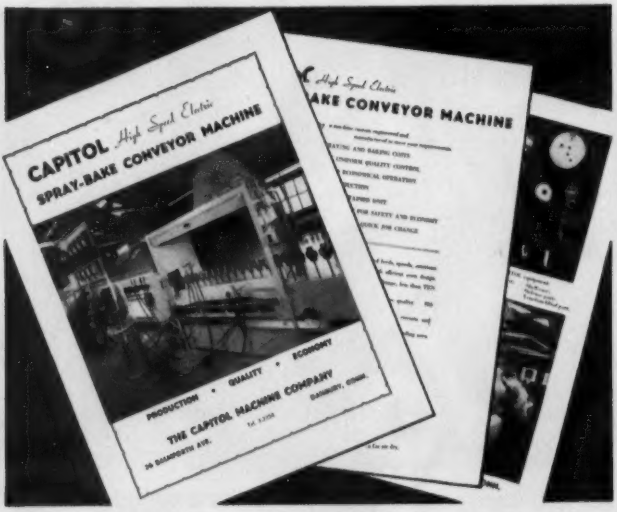
★ ★ ★

Plating Timer

Manufacturer: R.E.P. Electric Products Co., 539 Webster Ave., New Rochelle, New York.

Description: The Cyclomatic Timer, which signals when a preset plating cycle has been completed.

Operation: Unit automatically starts timing as soon as work is put into the plating tank. When cycle is



Descriptive folder on Capitol Spray-Bake conveyor machines . . .

Capitol has a long proven background in the custom engineering and manufacture of spray bake conveyor units. Capitol equipment speeds production, lowers spray and bake costs, assures uniform quality control, quick job change . . . offers many unique design advantages. Complete consultation service— write for full information.

THE CAPITOL MACHINE CO. 36 BALMFORTH AVENUE DANBURY, CONNECTICUT

For more data circle 341 on Postpaid Card

Completely automatic unattended unloading end of the Stevens Automatic Barrel showing control panel and rectifier site located above machine.

Unistrut says— "COSTS 50% LOWER— FINISH BETTER with . . . STEVENS AUTOMATIC BARREL MACHINE"

Every day in the Unistrut Corporation plant, Wayne, Michigan, thousands of small parts are zinc plated and shipped to Unistrut warehouses throughout the United States. All of these parts are zinc plated automatically by a Stevens Automatic Barrel Machine.

Unistrut high standards require a uniformity of plate on the parts used in their metal framing systems. But since installing the Stevens Automatic Barrel they have reported other advantages as well – "less handling, smaller inventories and quicker shipments." When you consider the 50% cost savings of actual plated parts too, it all adds up to a terrifically profitable investment.

Why don't you tell us your metal finishing problems and let us make recommendations. There's no obligation.

Write today for your copy of the 1957 bulletin, "The Modern Concept . . . Stevens Automatic Barrel Processing and Plating Machine." Write to Frederic B. Stevens, Inc., 1800—18th Street, Detroit 16, Michigan.

STEVENS 75 YEARS OF SERVICE

FREDERIC B. STEVENS INCORPORATED
YOUR METAL FINISHING SUPERMARKET
DETROIT 16, MICHIGAN

For more data circle 342 on Postpaid Card

completed, it signals with a buzzer, and continues to buzz until work is removed from the tank or timer is switched off. It then automatically resets for the next plating cycle.

Features: Capacities up to 6,000 amperes. Timing ranges from ¼ second minimum to three hours maximum are available in different models of this timing device.

Typical Applications: Wherever prevention of overplating or underplating is important.

For more data circle 4 on Reader Service Card

★ ★ ★

Contour-Polishing Discs

For contour grinding or polishing in small radii or difficult contours, a mushroom-shaped molded rubber pad and coated abrasive discs have been developed by Behr - Manning Co., of Troy, N. Y., a division of Norton Company.

The discs and pads, currently available in diameters of 5 and 8 inches, were designed specifically for getting into contours that are difficult to polish.

In many cases, the use of this type of pad makes it possible to do an entire contour in one operation, the manufacturer states. Swirl marks and gouges are virtually eliminated, it is stated, so that subsequent finishing operations are often unnecessary.

No center nut is required to fast-

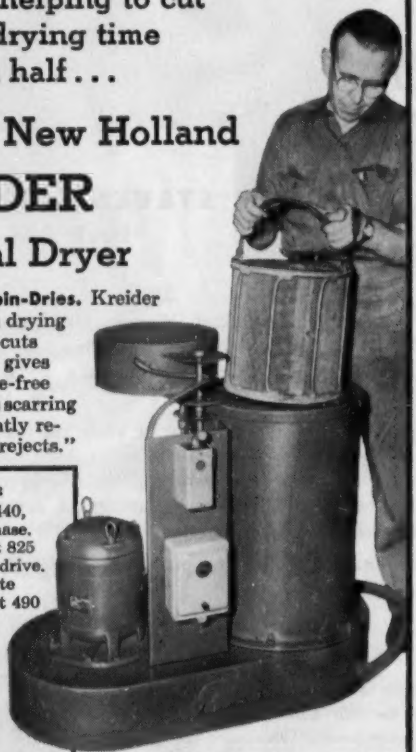
To page 82→

This man is helping to cut small-parts drying time just about in half . . .

Model 20 New Holland

KREIDER

Centrifugal Dryer



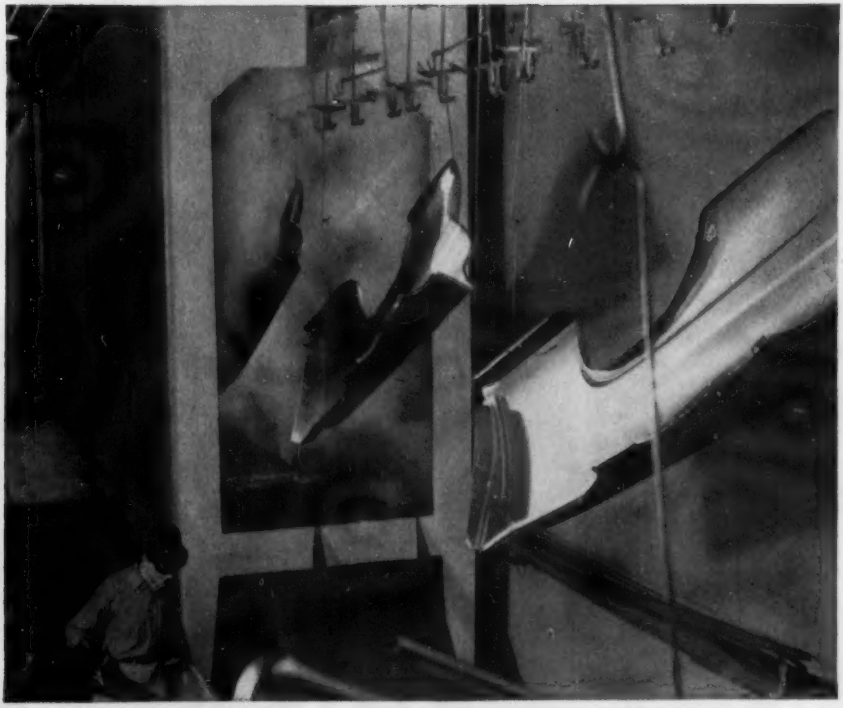
Air-Dries . . .as it Spin-Dries. Kreider Dryer double-action drying speeds production—cuts costs way down . . . gives you smooth moisture-free surfaces—eliminates scarring and marring frequently responsible for costly "rejects."

Specifications:
1-h.p. motor—220, 440, 550 volts—2 or 3-phase. Spins 75-lb. loads at 825 r.p.m. Quiet V-belt drive. Arc-welded steel plate construction. Weight 490 lbs. Minimum floor space. Meets N.E.C. specs. Auxiliary electric or steam heating units available as optional equipment. Choose from 3 models.

Send for illustrated 4-page folder. Address Dept. PF-5712

NEW HOLLAND MACHINE COMPANY
NEW HOLLAND, PA.

For more data circle 343 on Postpaid Card



Experienced formulators know metal cleaners containing Dow Alkali do top job

Does the formulator of your cleaning compounds use Dow Alkali?

Experienced users of metal cleaning compounds prefer formulations made with Dow Caustic Soda or Dow Sodium Orthosilicate for spray cleaning, soak cleaning and electrolytic cleaning. That's an important fact for anyone who cleans metal parts to keep in mind. The reason is simply that experienced users are in the best position to judge the effectiveness and economy of the cleaning materials they use.

Their years of experience have proved to them that formulations made with Dow Alkali *consistently* give them the best results in terms of faster, more thorough cleaning and with fewer parts rejected—because Dow Alkali delivers the most effective cleaning power money can buy! THE DOW CHEMICAL COMPANY, Midland, Michigan, Department AL-610L-2.

YOU CAN DEPEND ON DOW

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The ONLY Buyer's Guide to the Finishing Industry!

FULL-YEAR COVERAGE

at lower per thousand cost than any monthly publication . . . regular or directory issue!

MOST EFFECTIVE

for manufacturers *and* distributors DISPLAY *and* CLASSIFIED

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"Very good DIRECTORY"

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MORE CIRCULATION
. . . in the plating field !

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. . . in the painting field !

At LOWEST COST
. . . per thousand !

INDUSTRY-ACCEPTED buying source for information on . . . EQUIPMENT, MATERIAL and PROCESSES for:

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NON-METALLIC COATINGS
Paint — Varnish
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Porcelain Finishing
And other finishes

Products Finishing DIRECTORY'S *exclusive* Distributor Listings supply the last and very important link in the sales chain. They tell readers "Where-to-Buy." Both classified and display advertising is available to distributors at regular rates.

Products Finishing DIRECTORY is a 13th edition in addition to regular monthly issues. The DIRECTORY can be used individually or in combination with monthly issues to earn attractive four, seven or thirteen-time rates.

Products Finishing DIRECTORY closes Feb. 15th for publication, March, 1958

products finishing directory

431 Main Street Cincinnati 2, Ohio

Mushroom-shaped molded rubber pad developed by Behr-Manning Co. is said to be ideal for smoothing difficult contours. The coated abrasive disc is molded to fit the pad.

en this disc to the pad. Instead, discs are held to the pad by a special adhesive packaged in tube applicators.

Abrasive discs are made in Resinall Metalite cloth, an aluminum oxide abrasive with an all-resin bond, in grits 120-X, 80-X and 50-X.

Pads of 5- and 8-inch diameters are made in the proper density for polishing; a third mushroom pad in 5-inch diameter is made in a harder density for stock removal. All may be used on any portable grinder.

For more data circle **5** on Reader Service Card

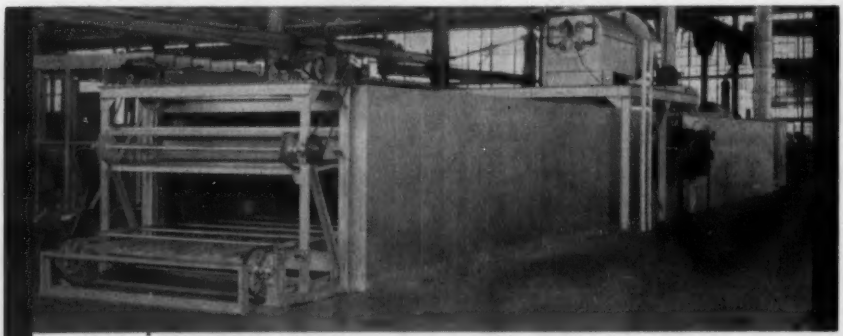
★ ★ ★

Steam Trap

Manufacturer: Sarco Co., Inc., 635 Madison Ave., New York, N. Y. Bulletin 455-B available, giving complete details.

Description: A float-thermostatic steam trap with construction modified to make maintenance easier.

Construction: Entire operating element is one unit, which can be removed without disturbing inlet and outlet



▲ *A continuous Double Strand paint drying oven with gas fired, recirculating air heater.*

carl mayer DRYING OVENS

• Guaranteed Uniform Temperature
• Long, Trouble-free Service

THE CARL MAYER CORP.

20800 CENTER RIDGE RD. • CLEVELAND 16, OHIO

A Few of Our Customers . . .

American Radiator Co.
Bendix Aviation Co.
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General Motors Corp.
Glidden Co.
Mullins Mfg. Co.
North Electric & Mfg. Co.
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For more data circle 347 on Postpaid Card

Prevent corrosion & protect metals without painting

- Lithoform® Z for zinc
- Alodine® 1200 for aluminum
- Permadine® for steel

Lithoform Z forms an amorphous chromate coating on zinc and cadmium surfaces which retards the formation of *white rust* or *bloom*. It is effective on most types of electro-deposited zinc, zinc die casting alloys, hot-dipped galvanized surfaces, and cadmium plated products.

Alodine 1200 forms an amorphous chromate film on aluminum which becomes an integral part of the metal and improves the natural corrosion resistance of the metal. In addition to protecting unpainted surfaces, it is a durable and tenacious base for paint.

Permadine—a heavy zinc phosphate coating chemical—forms an oil-adsorptive crystalline coating on steel. When used with such oils as Granoleum,® it provides excellent corrosion resistance.

Write for complete information about these ACP corrosion preventives

AMERICAN CHEMICAL PAINT COMPANY, Ambler 14, Pa.

DETROIT, MICHIGAN • ST. JOSEPH, MO. • NILES, CALIFORNIA • WINDSOR, ONTARIO

CHEMICALS ACP PROCESSES

For more data circle 348 on Postpaid Card

connections. Steel trap body, stainless steel valve mechanism, copper float, bronze thermostatic air vent. Designed for up to 125 p.s.i. steam pressure. Separate air vent, which requires no adjustment when pressure changes.

Operation: Provides condensate seal and prevents loss of steam. Discharges condensate at steam temperature continuously and without shock. Air vent removes all air and incondensable gases, allowing no steam to escape.

Typical Applications: Drip steam mains, unit heaters, blast coils, heat exchangers and other allied process applications that require accurate temperature control.

For more data circle **6** on Reader Service Card

★ ★ ★

Heat-Reflecting Cover

"Kamklad," a fire-protective, heat-reflecting aluminized asbestos cloth made by the Keasbey & Mattison Company of Ambler, Pa., functions as a heat-resistant cover for a catalytic exhaust purifier installed on the counterweight of a fork lift truck.

The "Kamklad" cover protects the driver from heat generated by the purifier unit, which eliminates, by catalytic burning, as much as 90 per cent of the carbon monoxide and other fumes in gasoline exhaust —an important safety measure in a closed-in area. The purifier, called the Oxy-Muffler, is manufactured by Oxy-Catalyst, Inc., of Wayne, Pa.

"Kamklad" resists heat from

We deliver . . .
HIGH QUALITY
SYNTHETIC ENAMELS
at low cost

When low cost is your target, you don't have to sacrifice quality to hit the mark. Synthetic enamels from STANLEY will meet your every requirement for appearance and performance . . . *and cost you less!*

If quality and cost deserve equal consideration, investigate how STANLEY technicians — young in ideas, old in experience — can custom-formulate a synthetic enamel that will do the finishing job you require . . . *economically.*

Write for this free file folder with data sheet on Low Cost Industrial Baking Systems.

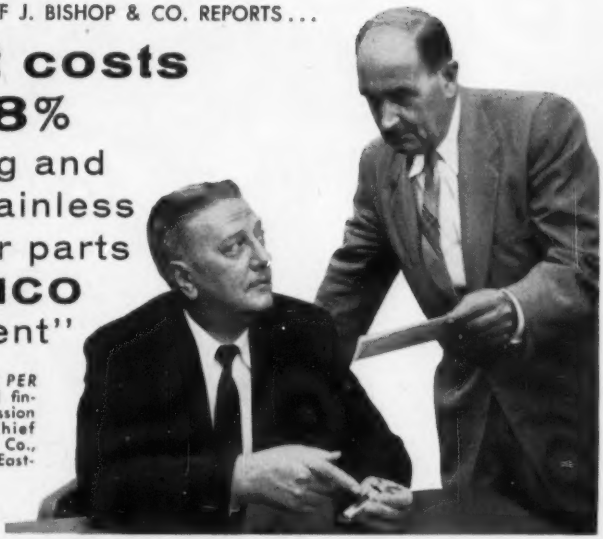
STANLEY CHEMICAL COMPANY*
Subsidiary of The Stanley Works
DEPT. L, 1468 BERLIN STREET, EAST BERLIN, CONN.
**Member, Vinyl Dispersions Division, S.P.I.*

STANLEY
See Stanley first for finishes that last
LACQUERS • SYNTHETICS
VINYLS • ENAMELS

STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS
For more data circle 349 on Postpaid Card

THE CHIEF ENGINEER OF J. BISHOP & CO. REPORTS . . .

"We cut costs 98.8% by deburring and polishing stainless steel tubular parts with ALMCO equipment"



SAVINGS OF $6,917.50 PER YEAR by controlled barrel finishing is the topic of discussion between J. H. Gettig, Chief Engineer of J. Bishop and Co., and O. D. Ladley, Almco Eastern Branch Manager.

HALF A MILLION delicate parts for recording instruments and fountain pens are deburred and polished each year at J. Bishop & Co. of Malvern, Pa. Each must meet rigid requirements in uniformity of size, smoothness and high polish.

A costly process? Yes, when you consider the way Bishop used to finish them by machine reaming, hand scrapers, wire brushes and belt polishers.

Today this plant uses an Almco Model DB-200 finishing barrel, which gives three important advantages: (1) High volume, low cost deburring and finishing, (2) precise control during finishing process, (3) product improvement.

Here's how controlled barrel finishing worked out for J. Bishop & Co. They cut finishing costs by 98.8% . . . practically eliminated rejects . . . raised average output from 200 parts to 6000 parts per hour. Cost per unit for finishing has been cut from .014¢ to .00016¢. Annual savings total $6,917.50.

Almco's new, technician-staffed lab in Albert Lea, Minnesota can help you with your product parts too. We will examine your product parts, run them through tests, and come up with the answers you want. For example — where you can save finishing costs, how you can improve product quality and appearance, what method is best for your operation.

Why not send us your sample parts? Enclose specifications on the results you want. Or write us on your company letterhead asking an Almco engineer to call.

SEND FOR YOUR FREE HANDBOOK ON BARREL FINISHING

52 pages of facts and processes on barrel finishing. Shows typical installations, how to select the proper finishing barrel. Includes detailed cost chart on finishing of typical parts. Send for your copy.

Part of a half-million annual output, this batch of delicate instrument parts is being run in an Almco DB-200 barrel finishing machine.

ALMCO

DIVISION OF QUEEN STOVE WORKS, INC.

812 Marshall Street • Albert Lea, Minnesota

Sales Engineering Offices in Chicago, Detroit, Los Angeles, Newark, New Haven, Philadelphia and London, England

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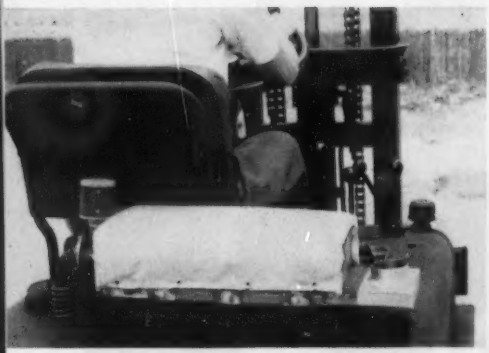


"Kamklad" fire-protective aluminized asbestos cloth on exhaust purifier of lift truck

within as well as from without. It can also be used to retain heat in specific areas. It is a tightly woven asbestos cloth surfaced by a special process with a heat-protective aluminum foil. The smooth aluminum foil surface reflects over 90 per cent of all radiant heat. This fire-protective, aluminized asbestos cloth fits snugly over the exhaust purifier on the counterweight of a fork lift truck.

For more data circle **7** on Reader Service Card

★ ★ ★

Organic Coating for Vacuum Metalizing

Manufacturer: Schwartz Chemical Co., Inc., 326 W. 70th St., New York 23, N. Y.

Description: Coating known as MC-30, which can be used both as a base coat and a top coat in vacuum metalizing metals.

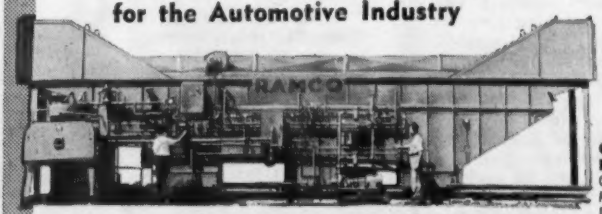
Characteristics: Developed for use on cast metals that are to be vacuum metalized. A lacquer formulation, it cures to a hard, glossy, solvent-resistant coating.

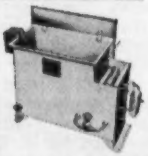
To page 90→

RAMCO degreasers

ANOTHER RAMCO PRODUCT

from Laboratory Units to Giants for the Automotive Industry





LABORATORY DEGREASER

GIANT FORD DEGREASER
Courtesy Ford Motor Car Co., Detroit

Call on our engineering department for the latest in ULTRA-SONIC CLEANING.

Send for FREE CATALOG. Call your nearest Ramco engineer and have your metal cleaning equipment SERVICED AT NO CHARGE.

RAMCO EQUIPMENT CORP. Div. of Randall Mfg. Co., Inc.
811 Edgewater Rd., New York 59, N. Y. • DAyton 3-3900
For more data circle 351 on Postpaid Card

"PROOF of THE FINISH is in THE OVEN" ...to a great extent.

We're inclined to base this statement on the testimonies of the many manufacturers we have been privileged to serve.

High volume, high quality finish production is almost a necessity everywhere today.

Users of our oven designs and installations tell us they are accomplishing this with comparatively low operating costs.

This makes for satisfaction all around.

Typical Quotes from Many of the Satisfied Users of LANLY Ovens in Diversified Industries

"Our paint appearance and gloss has improved considerably since we installed the New *LANLY BAKE OVEN.*"

R. O. R.

"We bake twenty-two colors in pastel shades on metal. With the LANLY OVEN we have experienced highly satisfactory results in obtaining uniform color and complete baking."

K. W. B.

We'll welcome the opportunity to discuss your drying and baking operations with you without obligation.

WRITE FOR THE CATALOG . . .

LANLY
FINISHING OVENS
THE LANLY COMPANY • 760 PROSPECT AVE
CLEVELAND, OHIO

For more data circle 352 on Postpaid Card

DU PONT PRODUCT NEWS

New Du Pont cost-analysis method helps you save money two ways

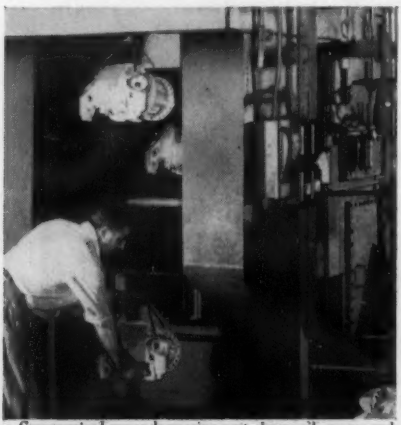
• Du Pont's exclusive cost-analysis method can help you cut cleaning costs or help you choose the best cleaning process for your needs. This new service is now available at no cost or obligation.

Du Pont and its distributors of Triclene® D trichlorethylen now offer an accurate method for analyzing all costs involve in metal cleaning. This new Du Pont service can save yo money by helping you (1) determine where present cleanin costs can be cut, or (2) choose the most efficient cleanin process if you're expanding or planning a new installation.

Du Pont's exclusive cost-analysis method combines 20 yea of metal-cleaning experience with proven cost-accounting pr cedures. The result is a simplified and thoroughly reliable w to compare all costs of various cleaning processes or of alte nate methods of handling your present cleaning operation.

Du Pont's cost analysis gives you a *complete* cost pictu and doesn't stop with the obvious, and usually misleadin cost factors such as equipment, solvent or chemicals. You'll able to answer any question about your cleaning costs co fidently and instantly spot those that are out of line.

Du Pont, or its distributors of "Triclene" D, will be glad give you full details. Whether it's cutting costs, improvi your present cleaning results or trying to decide which clea ing process is best for you—you can get accurate answ using Du Pont's proven cost-analysis method. Use the coup for prompt attention.



• Conveyorized vapor-degreasing unit cleans oil, grease and chips from machined aircraft cylinders.

Why vapor degreasing with TRICLENE® is ideal for assembly-line cleaning

It's fast —Vapor degreasing with "Triclene" D removes grease, cutting compounds and other contaminants—usually in less t a minute!

It's thorough —Vapor degreasing with "Triclene" D leaves p clean and dry—instantly ready for the next operation; never cau etching or staining—leaves no deposits of any kind.

It's versatile —Vapor degreasing with "Triclene" D will clean p made of all common metals and alloys, in any size or shape.

It's economical —Vapor-degreasing equipment is compact and expensive to install. Parts come out dry, eliminating need for dry —saves valuable floor space. Superior cleaning action of "Tricle D eliminates rejects, cuts downtime.

It's easy to operate —Anyone can do it. In fact, vapor degrea can be run automatically. Du Pont will be glad to provide inst tions for proper operation of your vapor degreasers if you wis

▶ If you would like to know more about degreasing, or wan be sure you're getting the most efficient cleaning from y present degreaser, call your Du Pont "Triclene" D distribu If needed, he can call in one of Du Pont's metal-cleaning exp You can also contact any Du Pont district sales office or use coupon at right.

FOR MODERN METAL CLEANING

ı Pont's combination of neutral ıbilizers makes TRICLENE® D HE BEST BUY IN DEGREASING SOLVENTS

a proven fact that "Triclene" D trichlorethylene gives ghter, stain-free cleaning; keeps degreaser coils free of ılge, thus reducing costly downtime and maintenance blems from clean-outs. All of these advantages can be ed to the unique combination of *neutral* stabilizers sent in today's "Triclene" D.

Developed by Du Pont research, these stabilizers guard inst attack from any deteriorating influences that may involved in cleaning today's common metals and alloys. a result, acids—formed by metals such as aluminum, y contaminants such as oil, grease and cutting com- nds—have no harmful effect on "Triclene" D's clean- action. You get more mileage from "Triclene" D . . put another way, you need less solvent to do the aning job when it's "Triclene" D.

Here's another economy feature. The neutral stabilizers "Triclene" D are locked in and can't escape during dis- tion. Result: "Triclene" D is just as good after distilla- as it was when Du Pont shipped it to you.

xperience in hundreds of metalworking plants has ved that "Triclene" D is the best buy in degreasing ents. If you would like to prove it in *your* degreasing ation, just call Du Pont, any distributor of "Triclene" r use the coupon below.

Your distributor of TRICLENE® D—

a good man to have on your team

Take inventories, for example. Think how much more of a problem they would be if you couldn't just call your distributor and get whatever supplies you need, where and when you need them. This applies not only to "Triclene" D, but to all of the other products he stocks locally for your convenience. But just one call from you—sometimes at the last minute—and you get the materials you need to keep production lines rolling. This convenience extends to your bookkeeping, where a single invoice can cover all of the different products you order.

More important perhaps than any of these valuable services is your distributor's local interest in you and your company. As an active member in your community, he takes care to provide you with quality products and any technical service that may be needed. If a difficult metal-cleaning problem develops, for example, he can call to your aid one of Du Pont's technical men. And it doesn't have to be a problem—he'll be glad to bring in an expert just to talk over any new ideas or plans you may have for expansion. Such meetings can often save you time and money.

Your distributor of "Triclene" D is a storehouse of valuable information, too. Manufacturers of the many products he represents keep him posted on new developments. He is always glad to share his information and provide you with useful literature. Think about the number of ways your distributor of "Triclene" D can help you—then give him a call. You'll find he's a good man to have on your team.

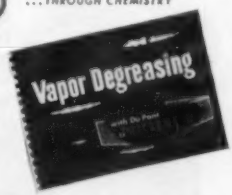
* * *

DID YOU KNOW 7 degreasers using "Triclene" D went two years without the need for a clean-out for a leading aircraft company? Striking proof of the stability, purity and dependability of this rugged solvent.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

FREE VAPOR-DEGREASING BOOKLET tells you how vapor degreasing works, shows types of equipment, points out many cost-saving advantages. Just mail the coupon below for your copy.



ELECTROCHEMICALS DEPARTMENT
Chlorine Products Division

E. I. DU PONT DE NEMOURS & CO. (INC.)
Wilmington 98, Delaware

☐ Please send more information on your new cost-analysis method. PF-12
☐ Please send me your booklet on vapor degreasing.
☐ Please have your representative call for an appointment.

*Name*_____ *Position*_____
*Present method of cleaning*_____
*Firm*_____
*Address*_____
*City*_____ *Zone*____ *State*_____

For more data circle 353 on Postpaid Card

Application Procedure: Apply by dip, spray, or flow coat. Bake at 275 deg. F. for 30 minutes. Curing time can be reduced by use of higher temperatures.

Typical Applications: Before and after vacuum metalizing cast metals.

For more data circle **36** on Reader Service Card

Safety Device for Vapor Degreasers

A control for use in making the operation of vapor degreasers more safe has been announced by Fulton Sylphon Division of Robertshaw-Fulton Controls Co.

The automatic control is a self-operated device, requiring no air or electricity for its operation.

In installation on steam-heated vapor degreasers, the manufacturer states, three kinds of protection are provided. To operate the first protective device, the steam for the heating coil of the degreasing solvent is fed through a valve which is triggered by the safety mechanism. The pressure element of this safety device is connected to the cooling-water supply line. A thermal bulb is installed above the condensing coils. If the cooling water supply fails, the safety control will trip, closing the steam heating supply.

The second safety feature of the control shuts off the degreaser if the vapors rise above the condensing coils.

Finally, the unit is so designed that if the safety control it-

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Barrel Finishing Equipment • Media • Compounds
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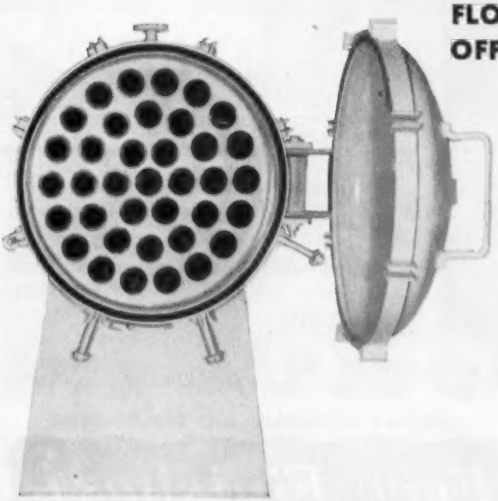
New!...TUBULAR FILTERS
By INDUSTRIAL



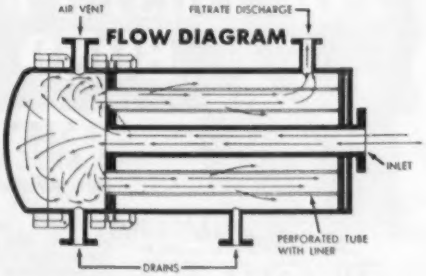
FLOW FROM INSIDE TUBE OFFERS NEW CONVENIENCE

- ★ Unequaled simplicity of maintenance.
- ★ Solids can be recovered in dry form.
- ★ Liners are easy to replace and inexpensive.
- ★ Ideal for intermittent or continuous operation.
- ★ Chamber can be emptied without losing cake.
- ★ No unfiltered "heel."
- ★ Can be used with or without pre-coat.
- ★ Ideal for polishing . . . as a trap filter . . . and as a scavenger for larger filters.

NEW SIMPLIFIED OPERATION

The filter is prepared for use by simply rolling flat sheets of filter paper and inserting them in the tubes, which are designed to force the paper snugly against the tube wall.

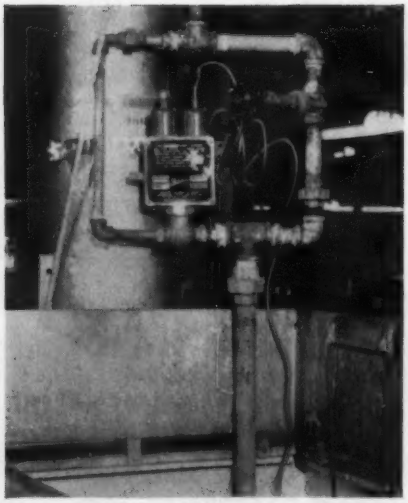
EASY TO CLEAN . . . Filter papers are simply withdrawn and replaced. Even the tubes are easy to remove, held in place by a simple rubber O-Ring. Except for the cover there are no nuts and bolts to handle.



FOR FULL DETAILS
WRITE FOR BULLETIN 123-1155

Industrial
INDUSTRIAL
FILTER & PUMP MFG. CO.
5904 OGDEN AVENUE • CHICAGO 50, ILLINOIS

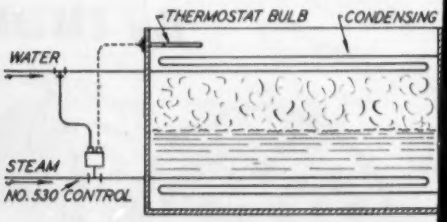
For more data circle 355 on Postpaid Card



Safety control installed on degreasing tank: gives protection against harmful vapors

self is damaged so as to become inoperable, the degreaser shuts itself off.

If desired, the device can also be



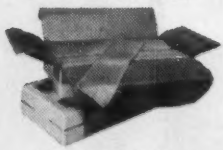
Drawing shows typical hook-up of safety control No. 530 on vapor degreasing machine.

installed with an alarm system that tells when something is not functioning properly.

Further information about safety control No. 530 is available from the manufacturer, Fulton Sylphon Div.,

For Dust Free Finishes!
BOND TACK CLOTH

IN ROLLS
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY — A SPECK-FREE FINISH EVERY TIME

Now Available In Rolls or Cut Bulk—White or Gold In Four Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up! Choice of Standard, Extra Tacky or Less Tacky, as desired.

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" or 9" x 18" for ease of handling. ALL BOND TACK CLOTH is *Spontaneous Combustion Proof, Lint-Free and Wax-Free.* Gives a sparkling speck-free Finish *every time.* Clean and Sanitary. No waste.

TRY THEM and COMPARE RESULTS. Samples Gladly Sent Upon Request.

"The Tacky Wiper Specialists"

Bond® CHEMICAL PRODUCTS CO.

2639 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

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A WARRANTY OF SATISFACTION IN EVERY CARTON

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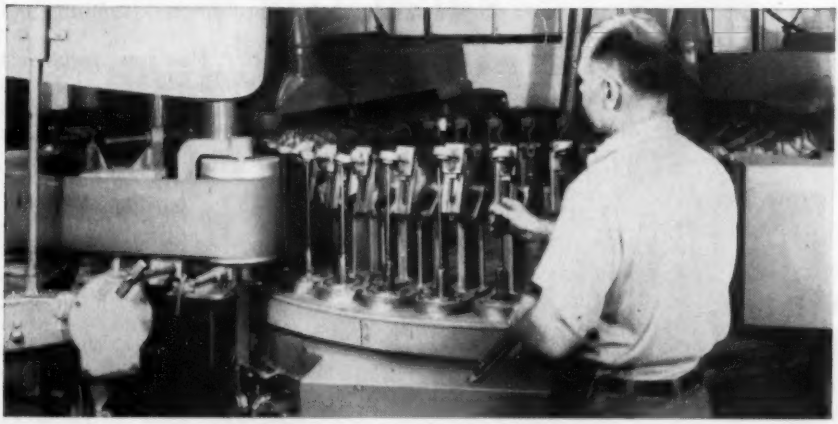
MICHIGAN BELTS Pre-Plate-Polish 1000 Rough Steel Forgings Per Hr.



MICHIGAN ON-THE-JOB FACTS:

OPERATION: Merry-Go-Round (four-head) roughing, finishing and pre-plate-polishing gear shift levers.

MATERIAL: 10-38 steel forgings.

ABRASIVE BELT: Four MICHIGAN RED COAT A/O metal-working cloth belts.

LOCATION: GENERAL PRODUCTS, INC., Jackson, Michigan.

No matter how simple or complex the machine you fit-out with an abrasive belt, it's the *belt* that finishes the piece. That's why General Products, like many others, keep Michigan Abrasive RED COAT Brand belts on the job. They *know* their investment in men and machines depends on the performance of the belts they use to deliver peak production at lowest possible cost . . . to deliver a profit!

Every day, new customers are being amazed at the *additional* production and superior finishes they get by just switching to Michigan RED COAT Brand belts on their existing machines. Michigan belts are *sharper cutting, smoother finishing and more resistant to loading* . . . you will find they deliver new-belt performance far longer than anything you have ever used.

Michigan Abrasive is the fastest growng manufacturer of coated abrasives in the country . . . and no wonder! The proof is in *performance*.

See what the RED COAT Brand of coated abrasives can do for you. Call your Michigan representative or mail coupon for free, complete catalog and representative will call you for an appointment. You will never know if your finishing costs are at rock bottom unless you do!

Michigan ABRASIVES

MICHIGAN ABRASIVE CO.

Manufacturers of "The Humidity-Controlled Abrasive"

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RED COAT BRAND

For more data circle 357 on Postpaid Card

Robertshaw-Fulton Controls Co., Box 400, Knoxville 1, Tenn.
For more data circle 8 on Reader Service Card

★ ★ ★

Plastisol Finish Looks Like Leather

Manufacturer: Metal & Thermit Corporation, Rahway, N. J.

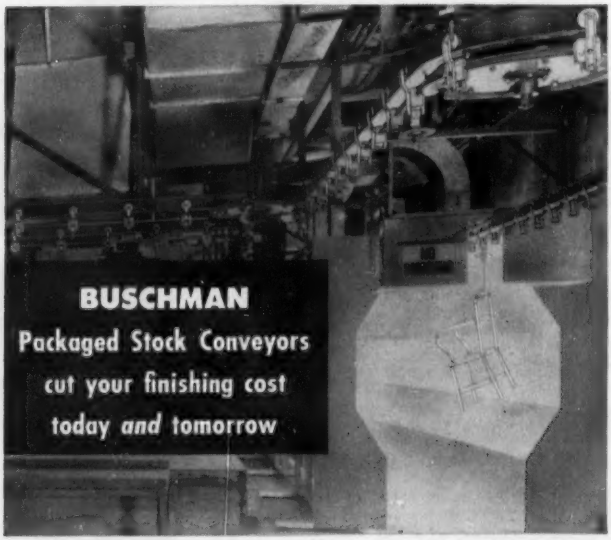
Description: A vinyl plastisol called "M & T Armorhide" is based on vinyl plastisol formulation, but has textured finish, similar to grained leather. Pattern of this finish hides imperfections, calls for less detailed surface-preparation procedures (sanding and polishing).

Characteristics: Has good resistance to wear and abrasion, comparable to other plastisol finishes. Also resists moisture, perspiration, acids, alkalies and other corrosives. Armorhide is said to have rubber-like flexibility and resiliency. It is sound-absorbent and can help to muffle noise of machine components. Dielectric strength is 400 to 500 volts per mil, thus it helps to lessen danger of shock. Available in many colors.

Application Procedure: Apply special air-dry primer; spray on Armorhide to a thickness of two to 40 mils, depending on requirements; after one-minute dry, spray with M & T Texture Agent; cure at 350 deg. F. for 15 minutes.

Typical Applications: Business machines, communications equipment, others where appearance and durability are important.

For more data circle 9 on Reader Service Card



Buschman BUSH-LOCK "Universal" Overhead Cable Conveyors make your production and finishing processes more profitable today . . . easily convertible to meet the changing needs of tomorrow. Standard stocked parts . . . right down to the exclusive BUSH-LOCK Trolleys and compact Drive Unit . . . pre-engineered to give you a conveyor system tailored to your plant needs. Let cost-cutting Buschman Conveyors move your products and components smoothly throughout the plant.

Write for bulletin No. 41

Buschman will cooperate with industrial washer or oven equipment manufacturers whenever your plant is being surveyed.

PRODUCE MORE FOR LESS
Buschman
CONVEYORS

C-334-EWB

THE E. W. BUSCHMAN CO.
4516 Clifton Ave., Cincinnati 32, Ohio
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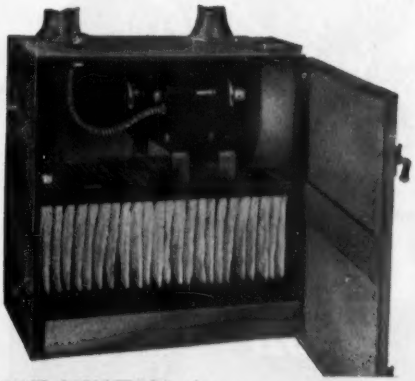
Hisey *makes both!*

V BELT DRIVE

DIRECT DRIVE

BUFFERS & POLISHERS



DUST COLLECTORS *also*
and Cyclone Type
Bag Type (as shown)

Our pride in having developed the first V Belt Buffer has not blinded us to the fact that there is still a place for direct driven machines. HISEY makes both—in a large variety and range of sizes from ¼ to 50 H.P., and both are made to the same high standard of quality built-in HISEY tools since 1896.

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OF
PRECISION SPINDLES,
SLIDES AND FEEDS

Hisey **THE HISEY-WOLF MACHINE CO.**
352 MT. HOPE AVENUE
CINCINNATI 4, OHIO

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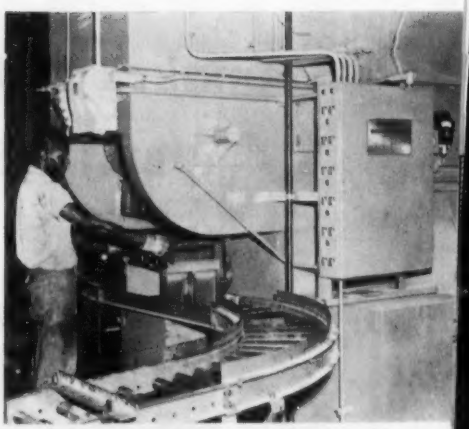
Parts Washer

A washing machine designated the Roto-Jet automatically washes, rinses and dries parts coated with quenching oil and simultaneously cleans the tote pans containing the screws. The washer is designed and built by Industrial Systems Co., Dept. CH, Matawan 1, New Jersey.

The Roto-Jet washer has a number of specially designed fixtures, constructed so that the tote pan containing the parts to be cleaned is clamped to the bottom of each fixture by a semi-automatic locking device. As each loaded fixture enters the washer it is slowly rotated as it passes through the washing, rinsing and drying cycles. When heavier work items are processed the drum fixture is gently rocked instead of rotated to prevent nicking of parts. The fixture with the tote pan containing the parts returns to the operator completely clean and thoroughly dry.



Entrance to Industrial Systems Parts Washer

The advantage of the washer is that batches of screw parts of different sizes can be consecutively fed into the machine without becoming mixed as

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One Man Can Operate

this

FULLY AUTOMATIC PLATING

and

ANODIZING MACHINE!

LASALCO'S *Cycleflex*

- No costly overhaul or rebuilding is required for cycle changing on this **most versatile of all automatics.** Only the positions of pick-up heads need be moved, plus minor tank partition changes.
- All possibility of conveyor breakdown is eliminated with the electro-mechanical control and safety device. These make it impossible to push racks into side of tank and, in case of power failure during working transfer, prevents load from dropping.
- Because no elevating mechanism operates above rack carrier unusually low headroom is needed.
- Self-cleaning heavy duty contacts have positive 6-point connection . . . practically no attention is required.
- Tank surfaces are left clear by easily removable rack carriers . . . an advantage in servicing and in manual plating of large pieces.
- Automatic loading and unloading of parts from standard double-spine racks is available.
- Where conversion coatings and bright dips are used, a delayed set-down arrangement can be furnished to work automatically with the cycle.
- Where more than one cycle is required, machine can be made to include by-passing.

Write for Brochure

Hydraulic operation, standard;
pneumatic operation, optional.

MAIL THIS TODAY!

Lasalco, Inc.
2520 LaSalle St.
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Send brochure on new fully automatic Cycleflex.
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they are processed. In addition, the problem of cleaning the tote pans for holding the clean parts is eliminated.
For more data circle 10 on Reader Service Card

★ ★ ★

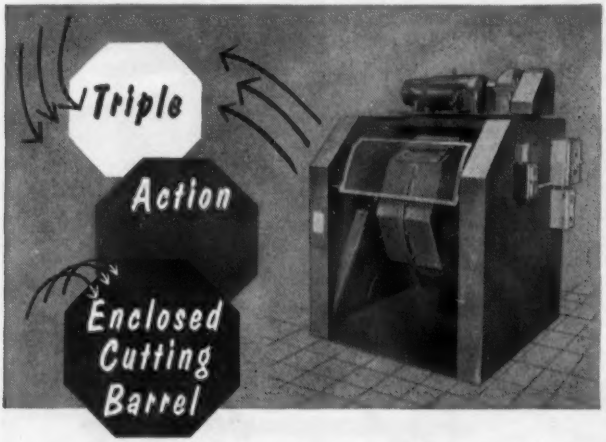
High-Vacuum Pump

A high-vacuum pump said to have better pumping speed has been introduced by the Rochester Division of Consolidated Electrodynamics Corporation.

Known as the Evapor-Ion Pump, Type EI-2000A, it provides an electronic method for producing high vacuum without the use of organic pump fluids. The Evapor-Ion pump creates a "dry" vacuum in the range from 10^{-4} to 10^{-8} mm. Hg. It pumps active gases by the gettering action of evaporated titanium wire, and pumps inert gases by ionizing and burying them under a layer of titanium.

Continuous titanium wire evaporation is assured by an improved feeder mechanism. Operation is possible for periods up to six months or longer without breaking vacuum for pump servicing. A power supply cabinet provides greater accelerator grid current and permits easier starting of the pump by simultaneous power application to the electrodes and firing of the primers used for roughing out. These primer charges have a combined absorption capacity of 360,000 micron-liters of active gases.

Further information on the Evapor-Ion pump



The Finest Cutting Barrel Ever Made

Hartford's great new enclosed barrel speeds deburring, descaling, polishing on screw machine parts, stampings, and castings. Hartford's unique *Triple Cutting Action* produces the highest degree of uniformity . . . faster . . . at lower cost. Extremely compact with every modern feature for efficiency, safety, and cleanliness. Available in 4 and 10 cu. ft. barrel capacities. Write for complete literature.

Hartford

PRECISION BALLS • RETAINERS
BEARINGS • TUMBLING BARRELS

HARTFORD STEEL BALL CO., INC.
122 Jefferson Ave., West Hartford 6, Conn.
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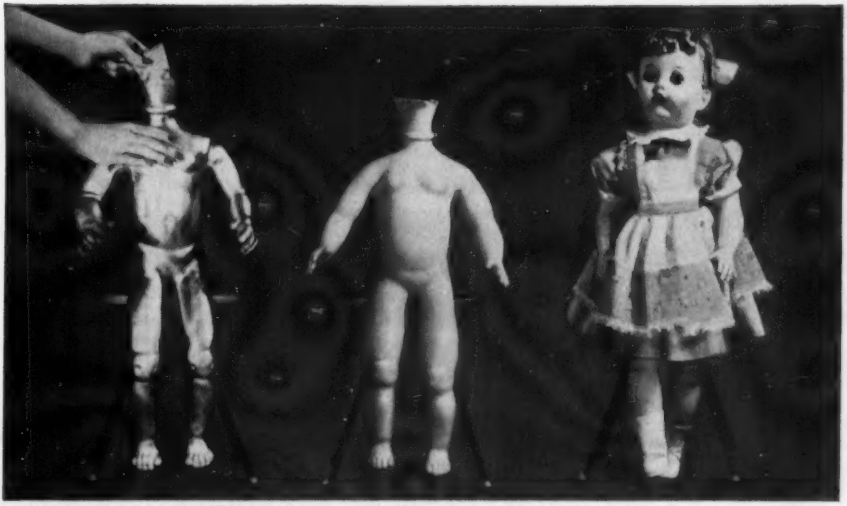

Copper doll molds (left) are built up slowly on wax masters or vinyl skins to a cross-sectional thickness of about .125". Slush-cast vinyl doll skin made in the mold. Finished doll at the right.

"Plus-4" Anodes make superior molds for slush-casting vinyl doll skins

"Electroforming copper molds for producing vinyl doll 'skins' is a tricky business," says Herbert L. Walker, president of The Plastiplate Co., South River, N. J. Details, right down to the toenails, must be reproduced accurately. The molds must be light, yet have the strength and toughness to withstand the strains of production. The deposited copper must be uniform and nonporous to prevent the seepage of water and solvents.

Plastiplate has been using "Plus-4"® Anodes, (Anaconda's phosphorized copper anodes) for about two years. Molds made with "Plus-4" Anodes meet all requirements and are far superior to those formed from ordinary copper anodes. In addition, Mr. Walker listed these operating advantages:

1. "Plus-4" Anodes corrode uniformly, providing about 10% more platable copper.

2. "Plus-4" Anodes do not develop anode sludge—providing more uniform build-up of cathode and a cleaner plating bath.

3. "Plus-4" Anodes give a smooth build-up on the mold, without treeing—and have superior throwing power, giving a better plate on the hard-to-reach surfaces of the mold.

See for yourself how "Plus-4" Anodes can simplify acid-copper electroplating and electroforming, reduce your costs. Write for information on how you can get a test quantity to supply one tank. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont. 57143

ANACONDA®

"Plus-4" Anodes

(PHOSPHORIZED COPPER)

made by

The American Brass Company

FOR USE UNDER PATENT NO. 2,689,216

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for Enduring Beauty

Dayco industrial finishes

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- Handle Finishes
- Removers
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FINE FINISHES SINCE 1906

Write us about your needs

JAMES B. DAY & COMPANY

1872 Clybourn Avenue · Chicago 14, Illinois

appears in Bulletin No. 6-140, available from Rochester Div., Consolidated Electrodynamics Corp., 1775 Mt. Read Blvd., Rochester 3, New York.
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★ ★ ★

Paint-Dipping Process

Development of a paint dipping process in which the paint dries as soon as the article being painted is removed from the dip tank has been announced by the David-Ludwig Company, Detroit, Michigan, builder of the equipment for this process.

Called the Harding Hot Dip Paint Process, this method of applying paint requires that the article first be heated, then dipped immediately into paint that has been heated to approximately 160 deg. F. The paint contains a chlorinated solvent, such as trichlorethylene, which is evaporated immediately by the heat radiating from the part being painted.

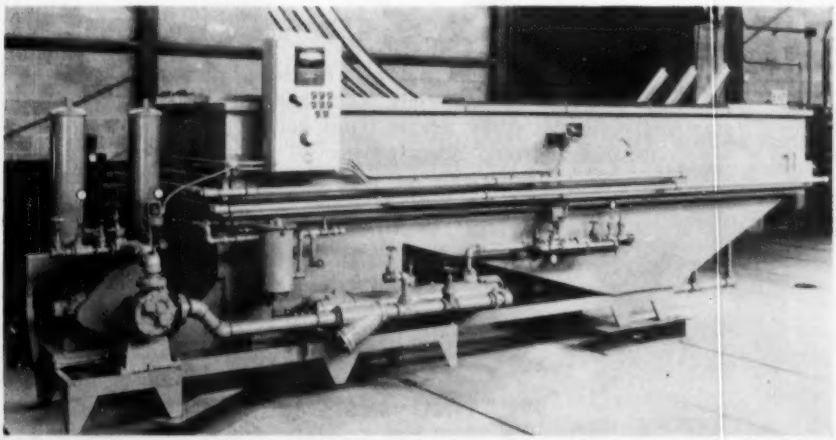
The most important advantage of this process is that thickness of the paint film can be controlled and kept uniform over the entire surface of the article being painted. Runs, tears, and drips are eliminated, since the paint dries immediately, before they have time to develop. Thickness can be controlled from ¼ to 2 or more mils in one dip.

Another advantage of the process is that trichlorethylene, the solvent most commonly used, is not flammable. Therefore, no fire hazard exists, and fire walls and extinguishing systems are unnecessary, it is stated.

Rapid solvent elimination eliminates the need for baking except where hard films are desired. When curing by heat is necessary, less baking time is needed, the manufacturer reports.

Equipment used in the Harding Hot Dip Process includes facilities for condensing the solvent, so that substantially all of it may be recaptured and diverted or returned to the dip tank.

For additional information, write to the David-Ludwig Co., 14290 Goddard, Detroit 12, Mich.
For more data circle 12 on Reader Service Card



Equipment for the Harding Hot Dip Process. Articles painted by this method dry immediately, without baking if desired. Process is said to save space and time.

For more data circle 364 on Postpaid Card

Zinc Brightener

Manufacturer: R. O. Hull & Co., Inc., 1304 Parsons Ct., Rocky River 16, Ohio.

Description: Brightener No. 503, for still and automatic zinc plating.

Characteristics: Resists break-down at high temperatures. Good brightness and covering power, even in recesses and on high-carbon steel. Fine grain, good luster. Accepts chromate conversion coatings or black finishes.

For more data circle **13** on Reader Service Card

★ ★ ★

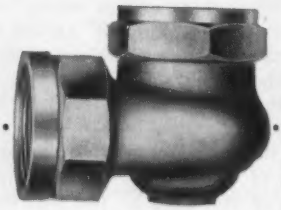
Spray Mask Painting Machine

Sepanski's automatic spray mask painting machine (Model BS-6M) is adaptable to simple or difficult spray-mask painting, involving work pieces of various sizes, shapes and surface conditions.

It is adjustable for any size part within the machine's dimensions. A single adjustment at each end of the stroke automatically controls both the length of the stroke, and the spray gun "on" and "off." This eliminates "over run" on small parts, and conserves production time and paint.

Full freedom for gun positioning at any angle and distance from the work is provided and spray gun tilt angle is adjustable from 0 to 15 degrees in each direction (30 degrees total) to assure uniform coverage in recesses, angles and around bridges and obstructions.

SPRAYING SYSTEMS CO.



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and better performance

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write for this great new catalog today

Ask for our new 48 page Catalog No. 24 . . . the most comprehensive spray nozzle catalog ever produced. Yours for the asking.

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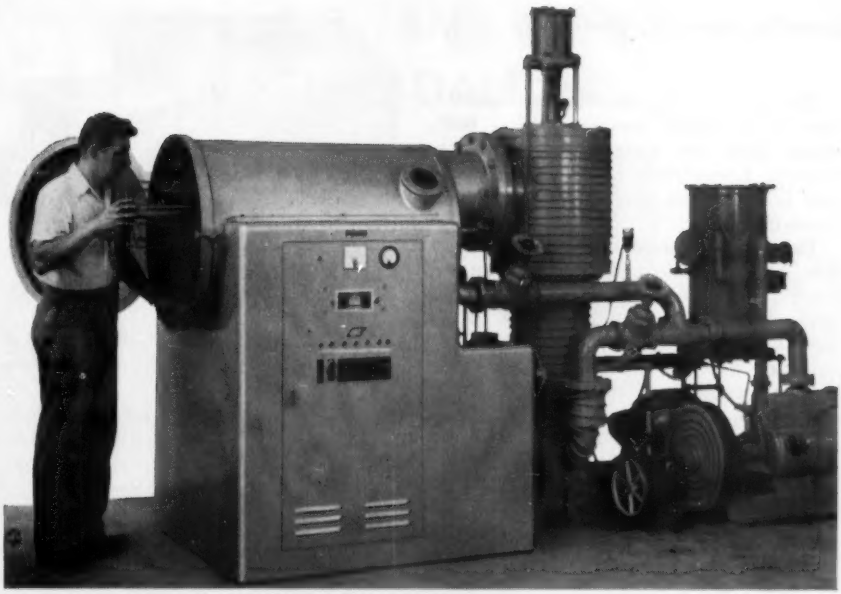
3229 Randolph Street • Bellwood, Illinois

For more data circle 365 on Postpaid Card



Proof that you don't have to be big to get into vacuum metallizing

With one of these CEC 30-inch coaters, you can earn sizable profits in vacuum metallizing just as the large finishers do.

And you can start with a surprisingly small capital investment.

Designed specifically to meet the needs of small and medium-sized finishers, the LC1-30 is compact, easy to operate, and economical to maintain.

Production rates? Fast. Very fast. For example, you can coat about 400 pieces 1½" in diameter per cycle. With just a little training most operators complete *five to seven cycles an hour.*

Recent developments in protective lacquers have made vacuum metallizing even more practicable—by making the gleaming finish more *durable* than ever.

If you would like more information on the LC1-30 (and a bulletin on lacquers), write for Bulletin 2-28.

Consolidated Electrodynamics

Rochester Division, Rochester 3, N. Y.

formerly Consolidated Vacuum

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES

For more data circle 366 on Postpaid Card

The gun carriage mechanism is ball-bearing-mounted, traveling on a ball screw drive for smooth and uniform control. Lubrication is by air pressure and is automatic while the machine is operating.

Pneumatic operation provides flexible and accurate control of speed of travel, amount of finishing material, spray gun pattern and cycling, and makes it possible to finish simple or involved designs with equal ease.

The general construction of the BS-6M Automatic Spray Mask Painting Machine permits complete concealment of the spray within the machine and, when connected to a suitable ventilating and ducting system, prevents the escape of vapors into the room.

Flow of clean air across the passage of spray is controlled within the machine and effectively prevents fumes and vapors from depositing on the guns and operating mechanism, keeping maintenance to a minimum.

Sepanski Model BS-6M Automatic Spray Mask Painting Machine: simple or complex parts

For more complete information on this machine, write Sepanski, 900 Clancy Ave., N.E., Grand Rapids, Michigan. Ask for Bulletin PFN-6.

For more data circle 14 on Reader Service Card

★ ★ ★

Pocket pH Meter

Many industrial problems involving pH control can be resolved with a Pocket pH Meter produced by the Beckman Scientific Instruments Division. This pocket-sized instrument gives on-the-spot pH readings in the laboratory, plant or field.

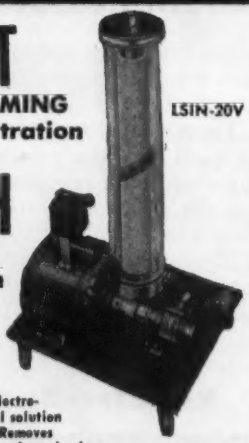
Pocket pH Meter

The meter is valuable for a wide variety of pH applications. The effectiveness of pickling baths, for example, is determined by pH measurements, as is the neutralization of waste pickle baths.

The Pocket pH Meter has a combi-

Sethco Filters Fast

FROM START
SELF PRIMING
instant filtration
TO FINISH
Automatic Backwash Reversal Switch



Models equipped with corrosive resistant alloys and materials for every electroplating and industrial solution from pH 0 to pH 14. Removes particles down to one micron in size.

Sethco Mfg. Co.
2292 Babylon Turnpike, Merrick, L.I., N.Y. MAyfair 3-4220

For more data circle 367 on Postpaid Card

For more data circle 368 on Postpaid Card

Hard-to-get-at Parts Protected with a DIP TANK SYSTEM by PETERS-DALTON

PAINT DIP SYSTEM—BUILT AND INSTALLED BY PETERS-DALTON AT THE NEW LINCOLN DIVISION PLANT, WIXOM, MICH. IT IS USED IN LINCOLN PAINT PROCESSING TO PROVIDE INTERNAL PRIME PROTECTION TO BOX MEMBERS OF UNDERBODIES.

Lasting and protecting finishes can be rapidly applied to products — ranging in sizes and types, from large and small appliances, business machines, metal furniture, to automotive frames, chassis, etc. — by means of a Dip Tank Paint System such as shown here.

The efficiency of design, engineering, construction, and installation by Peters-Dalton, is portrayed above. And while this particular system is for use in the automotive industry, comparable set-ups, or Spray and Flow Coat Systems, can be designed and built by P-D to best handle your products — regardless of size or production run quantities.

Behind each installation by P-D you have the assurance of more than a quarter century of highly specialized experience in the finishing field. From original design to final installation, Peters-Dalton engineering and fabricating is available to you, to insure finer finishes for your products. Why not send us your specifications or prints? Just write, wire or phone . . . we'll be glad to tell you more.

Representatives in Principal Cities

Hydro-Whirl Paint Spray Booths
Industrial Washing Equipment
Drying and Baking Ovens
Hydro-Whirl Dust Collecting Systems

PD Peters-Dalton INC.
A SUBSIDIARY OF DETROIT HARVESTER CO.
17900 Ryan Road • Detroit 12, Michigan

nation glass and reference electrode with a convenient 36-inch lead. This electrode may be used while still clamped to the instrument's side, allowing the operator a free hand to make notations.

Measurements in the range of 2 to 12 pH are possible with readability of 0.1 pH. The seldom-encountered lower pH values can be measured by a simple adjustment. Power is supplied by six standard-type batteries.

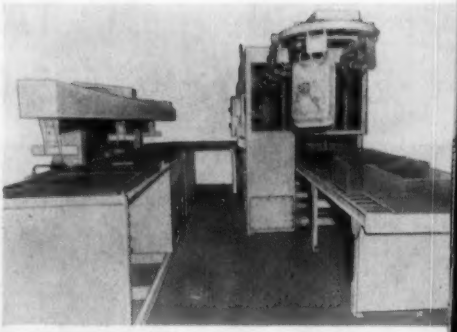
For further information on the Pocket pH Meter write Scientific Instruments Division, Beckman Instruments, Inc., Fullerton, California.

For more data circle 15 on Reader Service Card

★ ★ ★

Cleaning Machine for Small Parts

Manufacturer: Magnus Chemical Co., Inc., 208 South Ave., Garwood, New Jersey.



Magnus Cleaning Machine: boxes, small parts

Description: Conveyorized cleaning machine designed to be used for washing tote boxes and baskets of small metal parts.

Operation: All parts and tote boxes to be cleaned are loaded and unloaded at the same point. Small parts are

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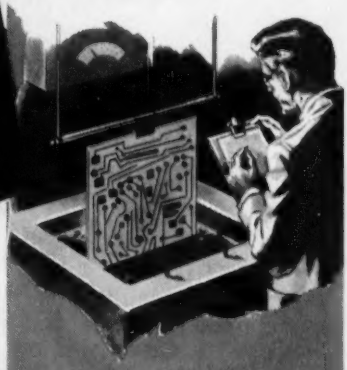
ELECTROPLATING SOLUTIONS



Technological knowledge acquired through many years of experience, plus special processes and equipment, assure the high quality of our Rhodium Plating Solutions.

Recommended for contact surfaces of switches, waveguide parts and other electrical applications, such as printed circuits...Can be applied in extremely heavy deposits, up to 100 milligrams per square inch.

Rhodium plating provides the advantages of whiteness, lustre and corrosion resistance of a precious metal.

Consult our staff, without obligation, about your specific plating problems.

Since 1901

SIGMUND COHN MFG. CO., INC.
121 SOUTH COLUMBUS AVENUE - MOUNT VERNON, NEW YORK

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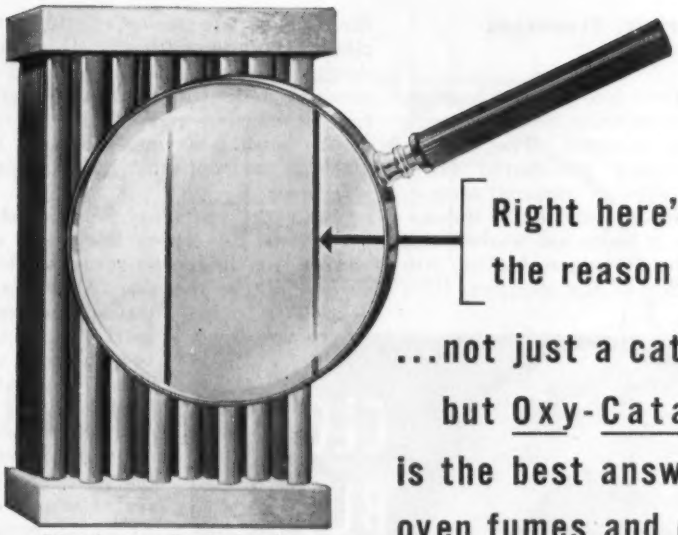

Enlarged cross-section drawing of an individual rod in an Oxycat unit

Right here's the reason...

...not just a catalyst but Oxy-Catalyst is the best answer to oven fumes and odors

The secret lies in the .003-in. film on the porcelain Oxycat carriers. It's this more efficient catalyst which Oxy-Catalyst uses, a patented combination of alumina and platinum on porcelain, that gives better cleanup, better heat recovery, and longer catalyst life.

Oxycats can eliminate fumes and odors from drying ovens and other processes by oxidizing organic and combustible contaminants in the exhaust far more efficiently than any other catalyst ever developed.

To stop your oven fumes and odors—to recover waste heat—to reduce fire hazards and maintenance problems caused by troublesome condensates, Oxy-Catalyst offers a complete engineering service. We make the entire installation—engineered to your exact requirements—and we assume full responsibility for the performance of the equipment.

Oxy-Catalyst works closely with all leading oven manufacturers. And new ovens can be designed with the catalyst as an integral part of the oven's heating system. So when you order new ovens, specify Oxy-Catalyst equipment.

If you would like to compare—to see for yourself the remarkably high efficiency of an Oxy-Catalyst installation—fill in this coupon, or write on your business letterhead, for complete information now.

Oxycat units were installed at the end of this vertical drying oven to oxidize troublesome solvent and varnish fumes at John A. Roebling's Sons Corporation, Electrical Wire Division Plant. This installation has been operating now for over 4 years.

OXY-CATALYST, INC.

Industrial Division, Wayne, Pa., U.S.A.

Fume Elimination Processes and Equipment
Industrial • Automotive • Consumer Products

Oxy-Catalyst, Inc., Industrial Division, Wayne 13, Pa.
Please send me complete information on your catalytic installations:

☐ For fume and odor elimination ☐ For waste heat recovery ☐ Have your representative call

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For more data circle 370 on Postpaid Card

transferred from tote boxes to baskets, which hold them while they go through the cleaning machine. The baskets are automatically transferred from loading station to washing section, then to rinse stage and on to unloading. Baskets of parts are washed and rinsed in the two-stage Aja-Lif Automatic section of the machine. Here the baskets are moved through the cleaning solution with a rapid up-and-down motion until dirt is removed by shearing action of this type of agitation. Immersion and agitating period in the wash and rinse stages of the machine are controlled by an adjustable timer.

While the parts are being washed in baskets, the empty tote boxes are washed in the power-spray washing section of the machine. After transferring the small parts from the tote box to the basket, operator hangs box on an overhead conveyor, which carries box through tunnel of machine, where it is washed by high-pressure sprays. Spray-washing section functions only when boxes are moving through. Thus when each basket of parts returns to the unloading station, a clean tote box is ready to take away the clean parts.

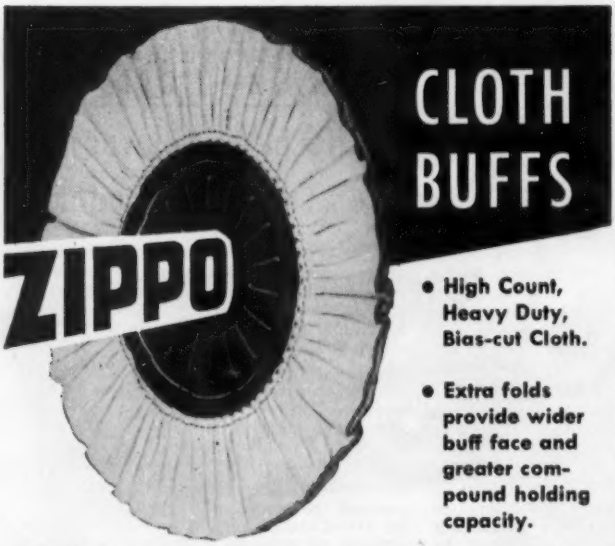
For more data circle 16 on Reader Service Card

★ ★ ★

Flat Finisher

Manufacturer: Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich.

Construction: Model FF-6 Flat Finisher has endless conveyor belt



- High Count, Heavy Duty, Bias-cut Cloth.
- Extra folds provide wider buff face and greater compound holding capacity.
- Ventilated Steel Centers.
- Perfectly balanced sections require no raking.

FORMAX BUFFS—These famous fast cutting and long wearing buffs continue to set the standard of performance for bias-type cloth buffs. You can depend on uniform quality from shipment to shipment.

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FORMAX MFG. CORP.
DETROIT 7, MICHIGAN
"THE FOUR McALEERS"

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Cut plating costs by saving anode metal use RED LABEL DARCO®

Purify your plating baths by regular treatment with Red Label DARCO activated carbon—and you'll get maximum mileage from scarce, costly anode metal. You'll keep plating quality consistently high—plating costs consistently low.

You'll like the way DARCO wets quickly . . . keeps your shop clean. You'll like the long filter cycles you get, due to its high bulk density . . . up to 50% higher than "fluffy" carbons.

The only activated carbon developed exclusively for the plating industry, Red Label DARCO is the leading choice of electroplaters everywhere. Order from your local DARCO distributor, in handy 50-lb. cartons.

DARCO IS MADE BY ATLAS

CHEMICALS DIVISION

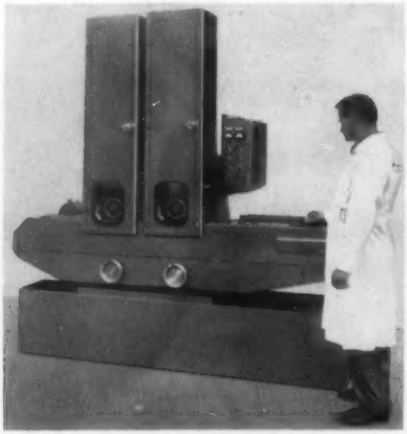
ATLAS POWDER COMPANY

WILMINGTON 99, DELAWARE

In Canada: Atlas Powder Company, Canada, Ltd.
Brantford, Ontario, Canada

For more data circle 372 on Postpaid Card

with variable-speed control. Abrasive belts are carried by two rolls: a powered contact roll and a tracking idler. The machine has manually controlled vertical adjustment. Tensioning on the



Hammond Model FF-6 Flat Finishing Machine

idler roll is maintained by adjustable air pressure.

Electromagnetic platen holds material on the conveyor belt. Magnetic force is variable to accommodate different sizes and shapes of work. Hold-down rollers mounted ahead of and behind each roller are used to hold non-magnetic materials in place.

Machine is available with single head or multiple heads. Head motors up to 7½ h.p. are available.

Applications: Continuous production of sheets, strips, bars, stampings, plates, up to 6 inches wide by 6 inches high.

For more data circle 17 on Reader Service Card

★ ★ ★

Ultrasonic Testing Transducer

Manufacturer: Branson Ultrasonics, Inc., 26 Brown House Rd., Stamford, Conn.

Description: An ultrasonic testing transducer with increased sensitivity.

Features: Type Z Transducer is said to have sensitivity greater than quartz or barium titanate, equal to lithium sulfate. Immersion mounted, this transducer will withstand operation at temperatures up to 250 deg. F. Completely waterproof. Contact testing transducers will withstand temperatures up to 450 deg. F. Internally grounded, this transducer is rigidly cemented to its backing. It has a protective abrasion-resistant facing with a Moh hardness of 9 (harder than sapphire). Face ring around transducer helps to keep flush contact between ultrasonic probe and work. Available for frequencies of 0.5 through 10 megacycles.

Typical Applications: Non-destruc-

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Synthetic PEARL ESSENCE with the natural look!
PEARLESCENT FINISHES
BAKE OR AIR DRY FOR
Your Product Made of Metal, Plastic, Wood or Glass.
Write for sample. Specify application and choice of vehicle.
Natural Pearl Essence Prices on Request
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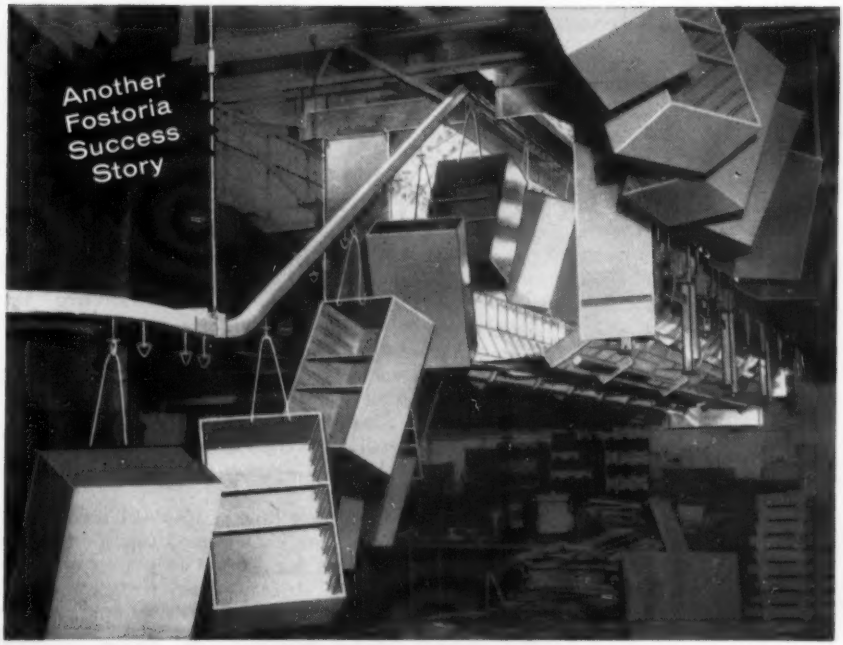


12½-minute baking cycle overhead speeds production below

Far-sighted planning by The Wright Line, Inc., prevented costly production line bottlenecks in their new one-story plant in Worcester, Mass. By suspending compact Fostoria Radiant Ovens ceiling-high . . . drying the "fine-wrinkle" finish on their metal card-handling cabinets is accomplished in 12½ minutes through controlled 365° F. radiant heat—and without interrupting the continuous flow of products at floor level!

Painted units are conveyed from spray booths upwards through 5′ x 6′ tunnel openings in their two 28½-foot Fostoria infrared ovens, for a fast, uniform baking-out operation. Valuable floor space is saved, production moves smoothly, and a better finish is assured at lower cost through efficient Fostoria radiant heat.

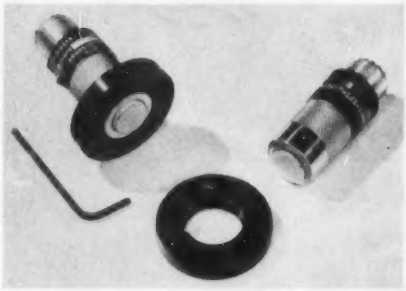
Consulting your Fostoria sales engineer can bring out some important cost-saving solutions to your finishing problems . . . heating, degreasing, baking, drying. He'll give you the facts on Fostoria radiant equipment — infrared lamp, quartz lamp or radiant rod—that will do the most work for you at lowest cost. 5513A

Write for free 20-page book, "Radiant Heat—applications unlimited"

INFRA-RED fostoria SYSTEM

FOSTORIA PRESSED STEEL CORPORATION • Dept. 1222, Fostoria, Ohio

For more data circle 374 on Postpaid Card



Ultrasonic Testing Transducers: sensitivity

tive thickness checking and flaw detecting. Especially useful for checking materials that are poor transmitters of ultrasonic energy, such as lead, laminated plastics, castings, severely corroded sections. Because of its high resolution, unit can be used to detect flaws that are close to the surface of the material under test.

For more data circle **18** on Reader Service Card

★ ★ ★

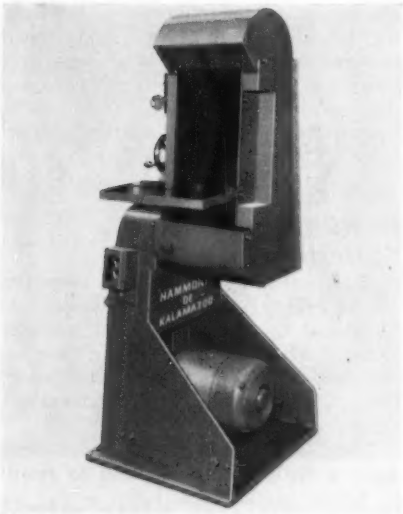
Abrasive Belt Polishing Machine

Hammond Machinery Builders recently introduced a 10-inch abrasive belt grinder, designated Model PD-10. This machine is suitable for dry, flat surface grinding, polishing and deburring of castings, die castings, forgings, plastics, glass, wood, ceramics, sheet metal and similar parts.

Model PD-10 can be quickly and easily adjusted to vertical or horizontal operating position, the manufacturer states.

The machine's 10-by-21-inch steel platen can be reversed top for bottom and side for side. The platen offers a working surface large enough to allow

COPPERHEAD!
See these Copperheads, Ha
We're still not getting anywhere
our cleaning problem. I think I'l
Dick Relick at Pennsalt . . . he hel
us straighten out our phospl
coating trouble last month, an
ought to have an answer
for this.
Yes, in fact we've batted this all around our department. It's possible you're using too strong a cleaner for this job.
Too strong? Now there's a switch!
Cleaning before porce
enameling isn't a cut-and-c
proposition. We think you
a mild, wetting-type cle
built to penetrate this cor
soil. We suggest you try a
of Pennsalt 85.



Hammond Model PD-10 Abrasive Belt Polisher

parts to contact the entire width of the belt.

Automatic air tensioning or spring-belt tensioning is available. Automatic air tensioning, however, is recommended for longer belt life and better finishing results. Standard belt speed is 3800 s.f.p.m., but other speeds are available.

Write Hammond Machinery Builders, 1622 Douglas Avenue, Kalamazoo, Michigan, for Bulletin 331-T covering specifications for Model PD-10 Abrasive Belt Grinder.

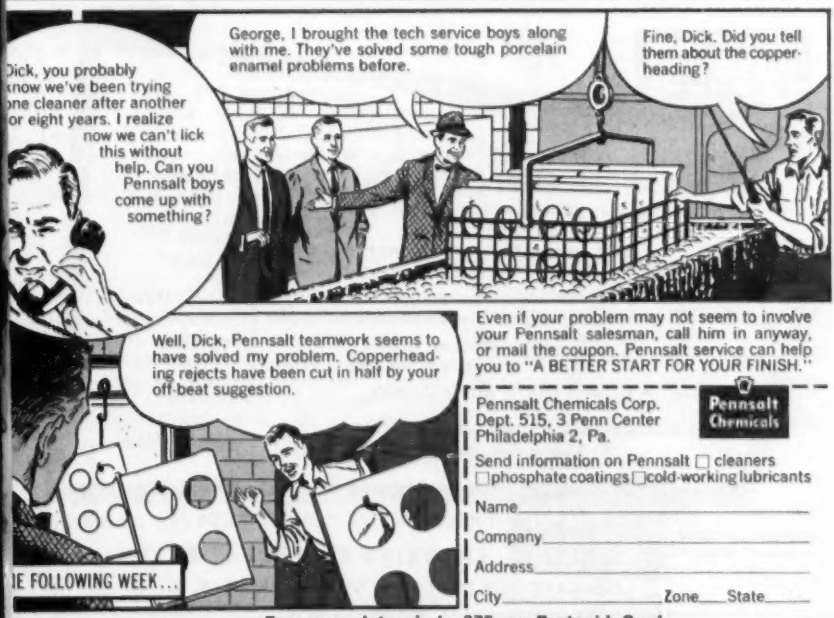
For more data circle **19** on Reader Service Card

★ ★ ★

High-Amperage Switch

Manufacturer: Unit Process Assemblies, Inc., 61 E. 4th St., New York 3, N. Y.

Description: A solenoid-operated switchgear suitable for use at high amperages. Capacities available range


Dick, you probably know we've been trying one cleaner after another for eight years. I realize now we can't lick this without help. Can you Pennsalt boys come up with something?
George, I brought the tech service boys along with me. They've solved some tough porcelain enamel problems before.
Fine, Dick. Did you tell them about the copper-heading?
Well, Dick, Pennsalt teamwork seems to have solved my problem. Copperheading rejects have been cut in half by your off-beat suggestion.
IE FOLLOWING WEEK...

Even if your problem may not seem to involve your Pennsalt salesman, call him in anyway, or mail the coupon. Pennsalt service can help you to "A BETTER START FOR YOUR FINISH."

Pennsalt Chemicals Corp.
Dept. 515, 3 Penn Center
Philadelphia 2, Pa.

Pennsalt Chemicals

Send information on Pennsalt ☐ cleaners ☐ phosphate coatings ☐ cold-working lubricants

Name_____

Company_____

Address_____

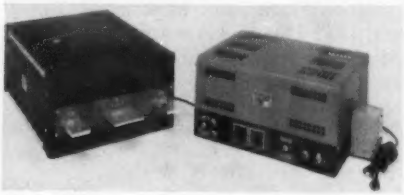
City_____ Zone____ State_____

For more data circle 375 on Postpaid Card

from 50 amperes to 35,000 amperes.

Typical Applications: d.c. switching for refining and electrolyte processes; periodic-reverse electroplating processes; d.c. polarity reversal in hard chrome plating, alkaline derusting and descaling and electrocleaning; switching in low-voltage d.c. furnaces for melting and sintering; battery charging and switching; d.c. welding; d.c. telephone equipment; high speed electro-tinning lines; and wherever switching or interrupting of heavy d.c. currents is required.

For more data circle **20** on Reader Service Card



U P A Switch: for switching heavy amperage

★ ★ ★

Hexagonal Plating Cylinders

All-welded cylinders of Tempron (hard rubber) or "H-T Sincolite" to fit Model C and E automatic oblique barrel plating machines have been introduced by The G. S. Equipment Co., 15585 Brookpark Rd., Cleveland, Ohio.

The G-S Model C and E Cylinders have a design which is said to result in better tumbling action.

A more thorough and rapid solution drainage is accomplished by a special hole (perforation) design providing more "open" area.

JELCO

—for the Brightest Copper ever . . . right out of the barrel!

Jelco BARREL COPPER BRIGHTENER

Can be used in your present regular solution with standard equipment

—Also available JELCO BRASS Additive and BARREL NICKEL Brightener

- ***The only ONE brightener required —lowers operating costs***
- ***Tops in throwing power—produces complete coverage immediately***
- ***Yields faster plating rate— increases production***
- ***Eliminates cyanide fumes***

A Proven Process . . . Used successfully by both manufacturers and job platers

The latest advance in Barrel Copper Plating

Non-Critical Cuts Rejects Boosts Production

Write for complete information

For the "Solution to your Plating Problems" . . . Come to

JELCO FINISHING EQUIPMENT CORP.

153 EAST 26th STREET • NEW YORK 10, N. Y.

Telephone: LExington 2-3055

For more data circle 376 on Postpaid Card

Brighter finish costs less with NIALK® TRICHLORethylene

What do you do when a part that's supposed to be bright and glossy comes out of the vapor degreaser dull—tarnished—unacceptable for finishing?

Faced with this problem, The Plume & Atwood Mfg. Co., Thomaston, Conn., switched to NIALK TRICHLORethylene.

Result: immediate improvement. Parts come out of the degreaser untarnished and immediately ready for further processing.

No more sour baths

Solvents previously used at P and A had to be dumped *every three weeks* to keep the degreaser bath from going sour. The first charge of NIALK solvent functioned without trouble for *nine weeks.*

At this point P and A installed newer degreasing equipment. Since then, NIALK TRICHLORethylene *has remained in service more than six months without once going sour.*

Only NIALK has psp

This example shows why you get *more effective, lower-cost* degreasing when you use NIALK TRICHLORethylene with **psp**—*permanent staying power.*

You *never* have to replenish the neutral stabilizer in NIALK. After many distillations, it's still there—working to prevent acid formation and other causes of breakdown. You go much longer, and degrease many more parts, between clean-outs.

For better degreasing, do this

See for yourself how you can keep *your* degreasers operating efficiently with NIALK—long after other solvents have lost their punch. Write us today on your business letterhead for the complete facts, including a resumé of comparative metallurgical tests on five leading brands.

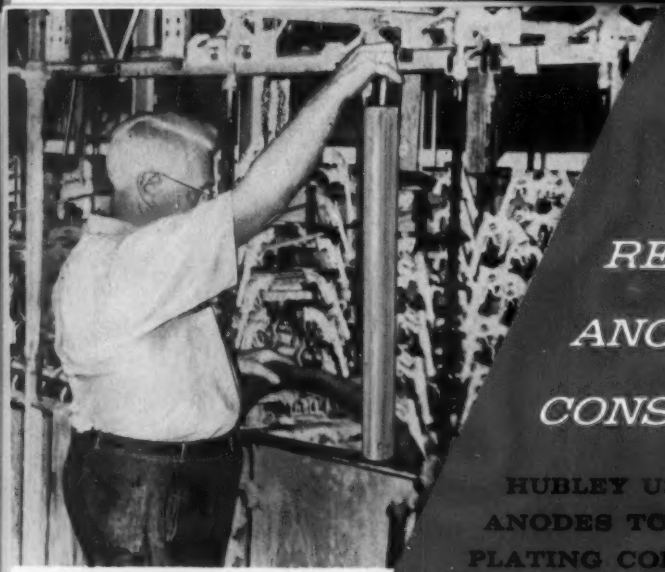
HOOKER ELECTROCHEMICAL COMPANY
1412 UNION STREET, NIAGARA FALLS, N. Y.

HOOKER CHEMICALS PLASTICS

DUREZ® PLASTICS DIVISION
NIALK® CHEMICALS
OLDBURY® CHEMICALS

Sales Offices: Chicago, Ill.; Detroit, Mich.; Los Angeles, Cal.; New York, N. Y.; Niagara Falls, N. Y.; Philadelphia, Pa.; Tacoma, Wash.; N. Tonawanda, N. Y.; Worcester, Mass. *Canada:* Hooker Chemicals Limited, N. Vancouver, B. C.

For more data circle 377 on Postpaid Card



PLATING PROBLEMS IN INDUSTRY—NO. 3

REDUCING ANODE CONSUMPTION

HUBLEY USES OFHC® ANODES TO GET MORE PLATING COPPER PER POUND OF ANODE

At Hubley, one of Santa's largest workshops, hundreds of toy guns are plated every hour with high-purity OFHC Brand Copper Anodes. 32-inch lengths of 2- x 3-inch OFHC ovals are used as well as 3-inch lengths of 2-inch OFHC rounds for barrel-plating.

Producing quality toys with eye-appeal to sell at competitive prices demands the best finishes possible at the most economical cost. That's why Hubley—one of the world's foremost toy manufacturers—plates with OFHC Brand Copper Anodes.

Hubley plating men attest that anode consumption for a specified coverage and thickness of plate has been reduced appreciably since they changed to OFHC Anodes.

OFHC Anodes yield these results because OFHC means *more plating per pound of copper*. OFHC is completely free of porosity—equal in density to forged copper, is 99.99+% pure, contains no oxides, no deoxidants. And OFHC Anodes' characteristically long-grained crystal structure and high purity combine to resist undercutting of small grains. This fact both minimizes the amount of copper wasted through the loss of small grains and eliminates the roughness caused by small particles free in solution.

To find out how the extreme purity of OFHC Copper Anodes can benefit your own electroplating operation, contact your distributor or our nearest office directly.

THE AMERICAN METAL CO., LTD.

61 Broadway, New York 6, N. Y.

BOSTON — CHICAGO — DETROIT — LOS ANGELES

Heavier danglers for longer wear are mounted inside as standard — or outside as optional.

The Tempron Cylinder operates in

G-S Equipment Model C Tempron Cylinder Assembly for Automatic Oblique Plating Machine

solution temperatures up to 250 deg. F., air-dry temperatures up to 350 deg. F. Both are available as complete assemblies, with yoke and danglers, to fit yoke arms of Model C and E automatic barrel plating machines.

For more data circle **21** on Reader Service Card

★ ★ ★

Alkaline Deruster

Heatbath Corporation has introduced an alkaline derusting material called Derustal, formulated to be used in removing rust, scale, paint, enamel and lacquer from ferrous metals without attacking the base metal.

Derustal can be used in place of acid pickles, eliminating pitting and hydrogen embrittlement, the manufacturer states.

A free-flowing powder, it is used at a concentration of one to three pounds per gallon in a solution operated at 180 deg. F. to boiling.

Further data is available from Heatbath Corp., Springfield 1, Mass.

For more data circle **22** on Reader Service Card

★ ★ ★

Pads for Spray Decorating

Manufacturer: Conforming Matrix Corporation, 356 Toledo Factories Bldg., Toledo 2, Ohio.

Description: A plastic pad formed to fit the part being spray decorated.

Plastic, form-fit pad mounted on a Conforming Matrix vertical-type air-clamping fixture

←For more data circle 378 on Postpaid Card

How Used: Pads are used to assure positive location and perfect fit of pieces into the spray masks. The use of a plastic pad helps to prevent fracturing of the finished surface, it is stated.

Typical Applications: For use with any part that is to be mounted on a fixture for spray decorating.

For more data circle **23** on Reader Service Card

★ ★ ★

Primers for Plastisols

Manufacturer: Dennis Chemical Co., 2701 Papin St., St. Louis 3, Mo.

Description: Two primers especially formulated to be used in fusing vinyl plastisol finishes to metallic and non-metallic surfaces.

Application Procedure: Supplied at proper viscosity for application by roller coating, but can be thinned for application by brush, flow-coat or spray.

Characteristics: Denflex No. 2394-1 will withstand immersion in cold or boiling water and exposure to high humidity. Light in color after baking, so that it will not show through thin top coats of light-colored plastisols. Requires a minimum of preheat before application of plastisol. Denflex No. 2394-30 Yellow Primer provides excellent resistance to salt water.

Typical Applications: Where good chemical and abrasion resistance are desirable and necessary.

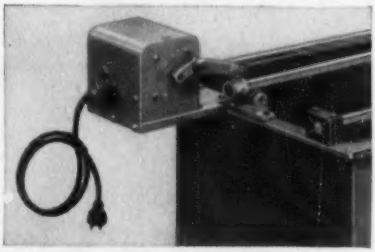
For more data circle **24** on Reader Service Card

★ ★ ★

Cathode Rod Agitator

Manufacturer: Belke Manufacturing Co., 947 N. Cicero Ave., Chicago 51, Ill.

Description: Variable-speed cathode rod agitator for small tanks.

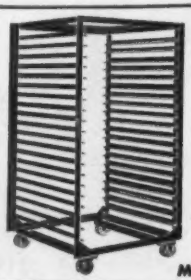


Belke Variable-Speed Cathode Rod Agitator

Specifications: Designed for cathode rods ¾ inch in diameter or smaller. Three-inch stroke with speed variation of 12 to 29 strokes per minute. Dimensions: 8½ by 9 by 5½ inches.

Typical Applications: For use in plating printed circuits, costume jewelry, precious metals, small lot work of all kinds.

For more data circle **25** on Reader Service Card



USE WILDER RACK TRUCKS

FOR

INCREASED PRODUCTION

AND

GREATER OVEN CAPACITY

Write for further information.

WILDER MFG. CO., INC.

DEPT. H

MECHANIC ST. & ERIE R.R., PORT JERVIS, N. Y.

For more data circle 379 on Postpaid Card

Want to SAVE up to 70% of heating costs on your phosphate coating line?

new Parker Cold Bonderite System does it!

Turn down the heat! Put most of your Bonderite line heat costs back in the till! Parker Rust Proof Company has developed a new Bonderite system for low temperature operation.

It includes a new cold alkaline cleaner that works beautifully at 70° and is effective in a temperature range from 60° to 120°. A new Spra-Bonderite, specially formulated to produce a superior coating at low temperatures, has been developed to work in conjunction with the new Parker cold cleaner.

With the new cold Bonderite system, savings are really sizable. Heat consumption in the line is cut by as much as 70%. Cost of the new Parker system is approximately equal to conventional alkali cleaners and phosphate coating chemicals, so the savings in heat are practically all velvet. It is estimated that on an average automobile body line the savings in steam costs can run as high as 10 to 12 cents per body; on an average refrigerator line 4 to 5 cents per cabinet. Savings in B.T.U.s can mean savings in dollars.

The new cold Bonderite system has been production-tested in mass production plants. Its performance has amazed the experts. It's ready to go to work in your plant, saving you money, right now!

Why go on paying for heat you don't need? Start using Parker's new cold Bonderite system. A letter or phone call will bring a Parker man with full, money-saving details.

Bonderite, Bonderizing, Bonderized—Reg. U.S. Pat. Off.

Since 1914—leader in the field

PARKER RUST PROOF COMPANY
2172 E. MILWAUKEE, DETROIT 11, MICHIGAN

BONDERITE	BONDERITE and BONDERLUBE	PARCO COMPOUND	PARCO LUBRITE	TROPICAL
abrasion resistant paint base	aids in cold forming of metals	rust resistant	wear resistant for friction surfaces	heavy duty maintenance paints since 1883

For more data circle 380 on Postpaid Card

Portable Current Density Indicator

A portable current density indicator has been introduced by the English Electric Company of Canada, Limited.

By giving a direct reading in amperes per square foot, this instrument enables the current density in the electrolyte at any point in an electroplating tank to be checked rapidly. Currents can then be adjusted for maximum efficiency.

The apparatus consists of a moving-coil ammeter connected in series with a plate electrode of known surface area. The electrode is immersed in the electrolyte between the component to be plated and the anode. When contact is made to the work bar through the forked spike on the ammeter case, a direct indication of current density in the tank at that point is given on the ammeter dial.

The instrument is available from the English Electric Company of Canada, Limited, St. Catharines, Ontario.

For more data circle **26** on Reader Service Card

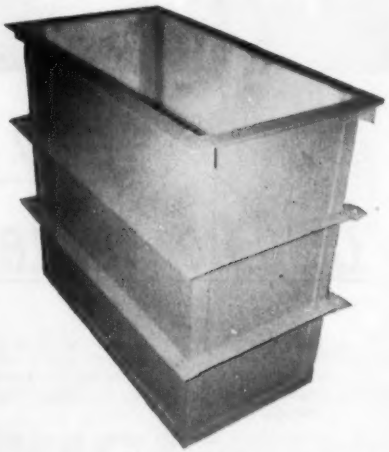
★ ★ ★

Plastic Tank

Manufacturer: Plating Products, Inc., 1509 N. Washington, Kokomo, Indiana.

Description: A chemical-resistant tank.

Construction: Tank is made entirely from sheets of fiberglass, joined together with special resin bond on corners and edges. Reinforced with fiberglass angles.



Plating Products' Fiberglass Plastic Tank

Applications: To contain chromic acid bright dips, acid dips, rinses after acid treatments, plating solutions, and other corrosive solutions. Descriptive literature is available from the manufacturer.

For more data circle **27** on Reader Service Card

★ ★ ★

Wax for Black Finish

Manufacturer: Rollo Chemical Co.,

SPRAY MASKS
REDUCE YOUR MASKING COSTS BY USING INEXPENSIVE, HEAT RESISTANT
KWIKY-DOTS
A raised edge is automatically provided on each disc for easy grasping. Connected strings of several discs may be removed for fast application. Stock Sizes—¼" up.
DIE-CUT MASKS, CAPS & PLUGS MADE TO SPECIFICATIONS
Special width of masking tape precision cut to any size from 1/32" up to 9" in standard 60 yard rolls.
BY-BUK COMPANY
4314 W. Pico Blvd., Los Angeles 19, Cal.

For more data circle 381 on Postpaid Card

Greater convenience for you!

HARSHAW NOW SHIPS FLUOBORATES IN NON-RETURNABLE CONTAINERS

Harshaw's use of this 5-gallon polyethylene-lined steel pail brings important benefits to you:

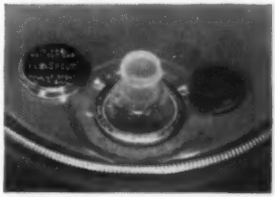
Convenient Stacking

YOU SAVE MONEY!

- No containers to return
- No records to keep
- No container deposit
- No return freight charges
- Less freight on incoming shipments

YOU SAVE WORK AND TIME!

- Light container—easy to handle even when full
- No special pouring equipment needed
- Built-in (pull out-push in) spout
- Specially designed for easy stacking



Pull Out-Push In Spout

These Harshaw fluoborate chemicals are now shipped in non-returnable containers:

Cadmium Fluoborate Solution
Copper Fluoborate Solution
Fluoboric Acid • Hydrofluosilicic Acid
Lead Fluoborate Solution
Nickel Fluoborate Solution
Tin Fluoborate Solution • Zinc Fluoborate

Enter your order today—the same high quality Harshaw fluoborates, and in a convenient new container.

THE HARSHAW CHEMICAL COMPANY

1945 E. 97th Street • Cleveland 6, Ohio

CHICAGO, ILLINOIS
CINCINNATI, OHIO
CLEVELAND, OHIO
DETROIT, MICHIGAN
HOUSTON, TEXAS
LOS ANGELES, CALIF.
HASTINGS-ON-HUDSON, N.Y.
PHILADELPHIA, PENNA.
PITTSBURGH, PENNA.

For more data circle 382 on Postpaid Card

9239 N. Knight Rd., Des Plaines, Ill.

Description: A hard wax for use as a final finish over black oxide or phosphate coatings.

Application Procedure: Used as received. May be applied by dipping, spraying or brushing. Drying time: less than five minutes.

Characteristics: Produces a satin finish that enhances appearance and helps to increase salt-spray resistance. Non toxic. Resists abrasion and chipping.

Typical Applications: Wax is applied to work to prevent parts from sticking together. Helps to cover up defects and uneven finishes. Can be used anywhere that a final wax finish is desired over a black oxide or phosphate coating.

For more data circle **28** on Reader Service Card

TRUE BRITE BRASS SOLUTION

A foolproof solution which has been in use over 6 years in light and heavy production.

- Ready To Use—Just Add Water
- No Variance in Color
- Trouble-Free—Little Supervision Needed
- Low Cost—Additions only once a day

Available in a variety of colors. Will match your sample.

Write for technical bulletin and prices.

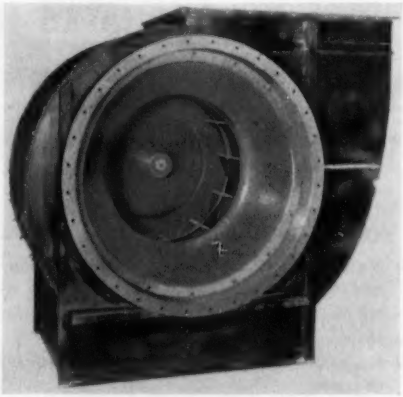
TRUE BRITE CHEMICAL PRODUCTS CO.
Box 31, Oakville, Conn.

For more data circle 383 on Postpaid Card

Corrosion-Proofing Material

Manufacturer: Ceilcote Co., Inc., 4848 Ridge Rd., Cleveland 9, Ohio.

Description: Coroline, a thermosetting plastic material.



Coroline Coating on an exhaust fan housing and blades: resists corrosion, abrasion.

Characteristics: Results in a coating with excellent resistance to chemicals and abrasion. Repeated heating and cooling do not affect the coating or its adhesion.

Application Procedure: Mix to required specifications. Apply coating to sandblasted surface with brush or trowel, heat to cure. Spark test to locate and eliminate pin holes. Ceilcote also offers factory lining service.

Typical Applications: Lining plating tanks, pickling tanks, cyanide tanks, fans blades and housings that are exposed to corrosive fumes.

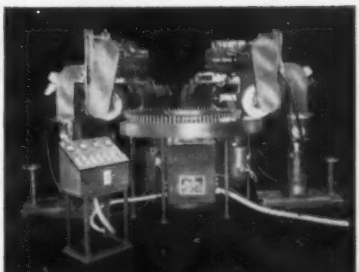
For more data circle **29** on Reader Service Card

★ ★ ★

Automatic Fixture-Type Painting Machine

Manufacturer: Duggan Masking Devices, 7075 Lyndon, Detroit 38, Mich.

Whatever your finishing requirements may be a PACKER-MATIC is the machine for you. Cost conscious mass producers have recognized the need for high speed, automatic polishing and buffing machines. Let Packer's engineering and developing departments recommend a PACKER-MATIC to meet your demands for faster, more uniform, low cost polishing, buffing and deburring. Send blueprints of parts or samples and we will tell you what PACKER-MATIC can do for you or write for more complete information today.



The finishing touch on cosmetic items is just one of many successful PACKER-MATIC applications.

PACKER-MATIC

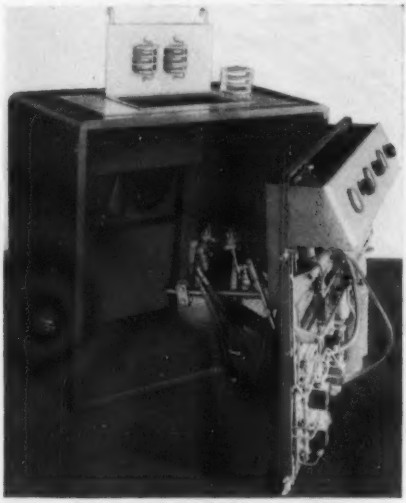
THE PACKER MACHINE COMPANY • MERIDEN, CONN.

Pioneer Manufacturers of Automatic Polishing and Buffing Machines

For more data circle 384 on Postpaid Card

Description: A fixture-type automatic painting machine, No. RG-6, with two automatic paint guns.

Operation: Two automatic paint guns reciprocate 24 inches from left to right, tilt 20 degrees, and then return to starting position, spraying



Duggan No. RG-6 Automatic Fixture-Type Painting Machine: it takes little space

parts mounted on specially designed fixtures.

Construction Features: All operating parts, including guns, are mounted on a plate so that they can be moved from the cabinet for cleaning without disturbing stack or motor connections. Entire operating mechanism is mounted under a removable sheet metal cover on the front of the machine, so that it can be reached easily. Machine occupies area of 36¾ by 30 inches, plus space required for motor and exhaust fan, which are mounted on rear of machine.

For more data circle **30** on Reader Service Card

Detergent for Ultrasonic Cleaning

Manufacturer: Acoustica Associates, Inc., 26 Windsor Ave., Mineola, N. Y.

Description: A liquid detergent specially formulated for use in ultrasonic cleaning equipment.

Characteristics: Water based, it accelerates the removal of soils when used in ultrasonic equipment.

How Used: Several ounces per gallon of this material, designated Ultrasonic Cleaner No. 715, are used in warm water.

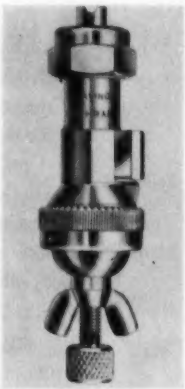
Typical Applications: Accelerating the cleaning of lenses, precision parts, surgical instruments, ball bearings, and clock-type mechanisms.

For more data circle **37** on Reader Service Card

★ ★ ★

Spray Nozzle

A spray nozzle equipped with a manually operated shut-off assembly has been announced by Spraying Systems Co.

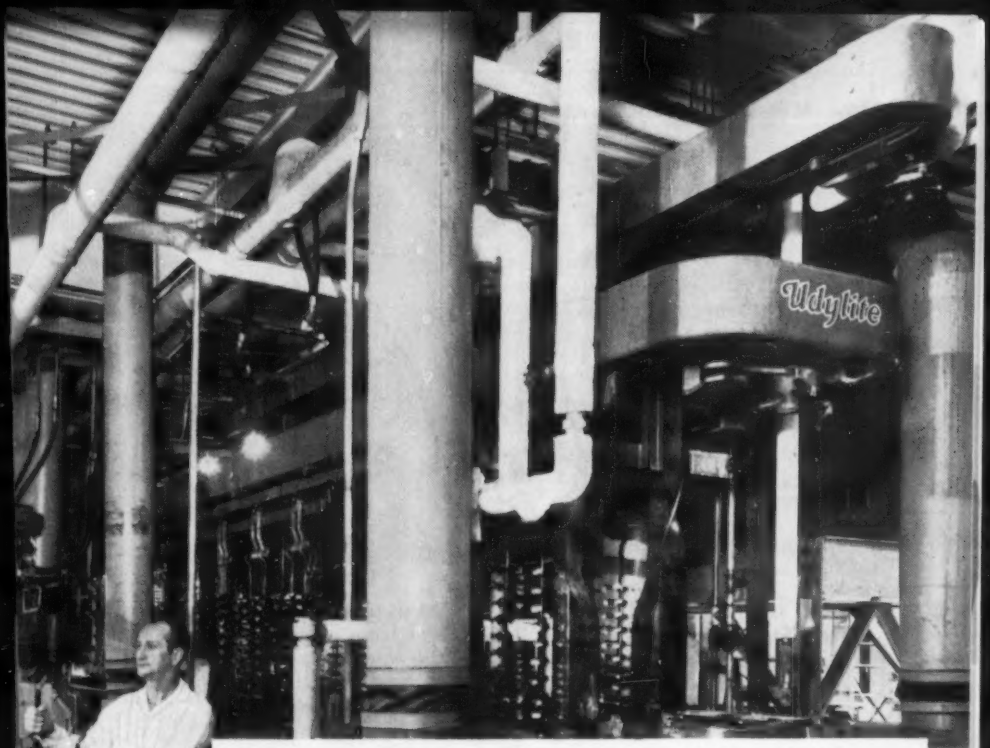


Spray Nozzle with Shut-Off

This nozzle is designed primarily for manifold installations, where selected nozzles must be independently shut-off to meet varying spraying requirements.

Construction of the nozzle includes a diaphragm valve, shut-off screw and wing nut. To close the nozzle, the shut-off screw is turned down to hold the diaphragm in shut-off position. The wing nut firmly holds the shut-off screw in place. When the shut-off screw is set in open position,

For more data circle 385 on Postpaid Card——→



Udylite Machine and Process combine to set new Scripto standards

The Udylite Cyclemaster provides the accuracy and steady flow of production. Udylite Bright Nickel furnishes the sparkling finish. Together they solve for Scripto, of Atlanta, Georgia, the knotty problem of better finish of the Scripto pens, pencils and cigarette lighters.

Scripto's first bright nickel was the Udylite #31 process. It was superseded by the Udylite #514 process to gain the faster brightening which is so important in nickel plating to a high luster with a thin coat.

The adoption of Udylite Bright Nickel Process #724 was the next step as it offered still faster brightening and even more important all the time saving advantages of all liquid brighteners.

Step by step Scripto has lowered costs and improved quality with Udylite Processes and Precision Automatic Plating. Here is just one of many examples of the right application of process and equipment. Out of the line of Udylite products can come the answer to your problem as well.

Contact your local Udylite Sales Representative . . . let him show you how the *right* combination of Udylite processes and machines can improve your quality and production.

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

WORLD'S LARGEST PLATING SUPPLIER

the diaphragm valve functions to shut-off the nozzle as soon as the manifold line is closed, eliminating any dripping that might otherwise occur as line pressure is reduced.

These nozzles are made in brass with an internal monel metal strainer. A choice of interchangeable orifice tips are available. A selection of full cone, hollow cone and flat spray patterns can be obtained.

For complete information on these Diaphragm Spray Nozzles with Shut-off Assembly write for Data Sheet 6033 to Spraying Systems Co., 3229 Randolph St., Bellwood, Illinois.

For more data circle **31** on Reader Service Card

★ ★ ★

Paint Pump

An air-powered pump recently introduced by Gray Company, Inc., agitates, pumps and circulates paints direct from original 5-10 gallon pails to the spray gun and back to the pail without exerting pressure on, or in, the container.

Graco Paint Pump: keeps paint agitated

This Graco unit is designed to keep metallic-base paints in constant suspension — even when material is not being sprayed. A separate, air-driven agitator, plus constant circulation through hoses, provides dual agitation and assures uniformity.

The air-powered pump is spark free. It automatically speeds up to compensate for spray gun demand, yet maintains previously set fluid flow.

For more information on this unit, write Gray Company, Inc., 1097 Sibley St., N.E., Minneapolis 13, Minn.

For more data circle **32** on Reader Service Card

★ ★ ★

Portable Plating Solution Filter

Manufacturer: Hanson-Van Winkle-Munning Co., Matawan, N. J.

Description: Dincalux Portable Filter, suitable for a wide variety of plating solutions.

Specifications: Filter area, 3.5

FUNCTIONAL FINISHES!!

If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity—

Try Us!

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

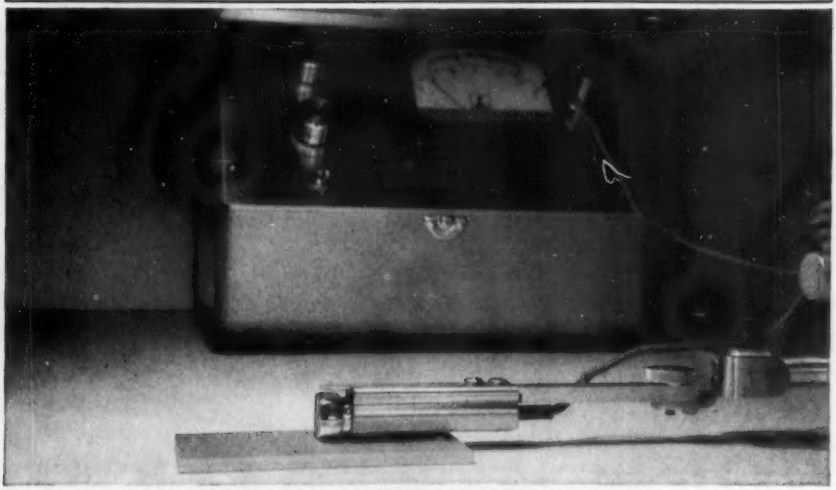
The Varnish Products Co.

5204 Harvard Avenue

Cleveland, Ohio

For more data circle 386 on Postpaid Card

REPORT NO. 4 /ON LOWERING TODAY'S COST OF PRODUCTION



Laboratory measurement of etch shows Aluminux consistently delivers a fine, even etch from load to load.

Load to load uniformity of aluminum etch eliminates rejects

Prevents rock hard scale, gives longer solution life

Ordinary etchants lose efficiency as aluminum in solution increases and precipitates out as scale. This means frequent dumping or increased concentrations to keep results consistent.

But with Diversey Aluminux, once the concentration, temperature and time are set, *every load will come through with the same even, diffused etch.*

The unique chelating action of Aluminux holds far greater quantities of aluminum in solution. In a 1,500 gallon tank, for example, Aluminux holds up to 1,000 lbs. of dissolved aluminum in solution (a potential 2,000 lbs. of scale). Even with this amount in solution, Aluminux continues to produce a uniform, diffused etch *without varying operating conditions.*

Aluminux enables you to tailor etching cycles to a wide variety of products and alloys. For literature, write Metal Industries Department, The Diversey Corporation, 1820 Roscoe Street, Chicago 13, Illinois.

PLANTS IN CHICAGO, NEWARK AND SOUTH GATE, CALIFORNIA.
WAREHOUSES IN PRINCIPAL CITIES.

DIVERSEY. **ALUMINUX**

Pat. Nos. 2,584,017–2,650,875.

For more data circle 387 on Postpaid Card

square feet, with 16 Perspex plastic plates; filters 900 g.p.h. free flow, 600 g.p.h. with carbon charge; all parts resistant to acids and alkalies, and temperatures up to 150 deg. F.; filtering action visible through transparent plastic casing; pump completely enclosed in filter chamber; dimensions: 15 by 15 by 28 inches.

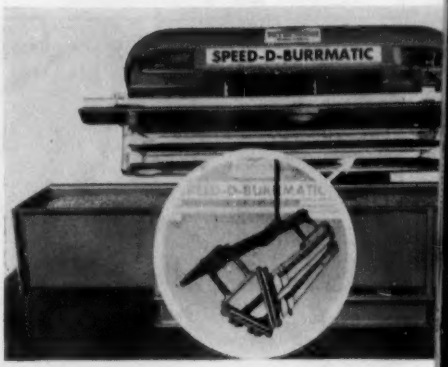
Typical Applications: Filtering such plating solutions as acid tin, tin zinc, cyanide zinc, bright nickel, cadmium, gold, silver, and anodizing solutions. Not suitable for filtering chromium plating solutions or other solutions that contain chromic acid.

For more data circle **33** on Reader Service Card

★ ★ ★

Long Barrel Finisher

Manufacturer: Speed-D-Burr Corp., 3613-e San Fernando Rd., Glendale 4, California.



Speed-D-Burr Barrel Finisher: for long, bulky parts. Inset shows holding fixture.

Description: The Speed-D-Burrmatic, a barrel finishing machine for finishing long or bulky parts.

Operation: The parts are held firmly by a holding fixture and lowered by hydraulic power into the abrasive media, where a sliding motion removes burrs and produces the desired surface finish. Four to six pieces at a time can be handled. Holding fixture automatically lifts from the media at the end of pre-set time cycle. Each unit is capable of handling parts up to 10½ feet in length and several units may be used in tandem to accommodate even longer parts.

When several machines are used in tandem, perfect synchronization and

QUALITY EQUIPMENT
PRICED RIGHT AND READY FOR IMMEDIATE SHIPMENT

BUFFING AND POLISHING EQUIPMENT

100 Hammond—Divine—U. S. Electric—Holland — Standard Electric — L'Hommedieu single speed and variable speed buffing and polishing machines. 1 to 20 HP.

6 Rotary Machines: Hammond—Acme—Packermatic.

Complete buffing systems for above machines, including hoods, cyclones, dust boxes, pipes, motors and blowers; various sizes.

Semi-automatic machines: Buffalo—Hammond Acme—Divine—Production.

ALL EQUIPMENT IN STOCK
INSPECTION INVITED

all quoted subject to prior sale.

J. HOLLAND & SONS, INC.
485 KEAP ST., B'KLYN, N. Y., STagg 2-2022

For more data circle 388 on Postpaid Card

GRANDPA USED PIPE COILS

Yes, but in grandpa's day the

Ask for bulletins.

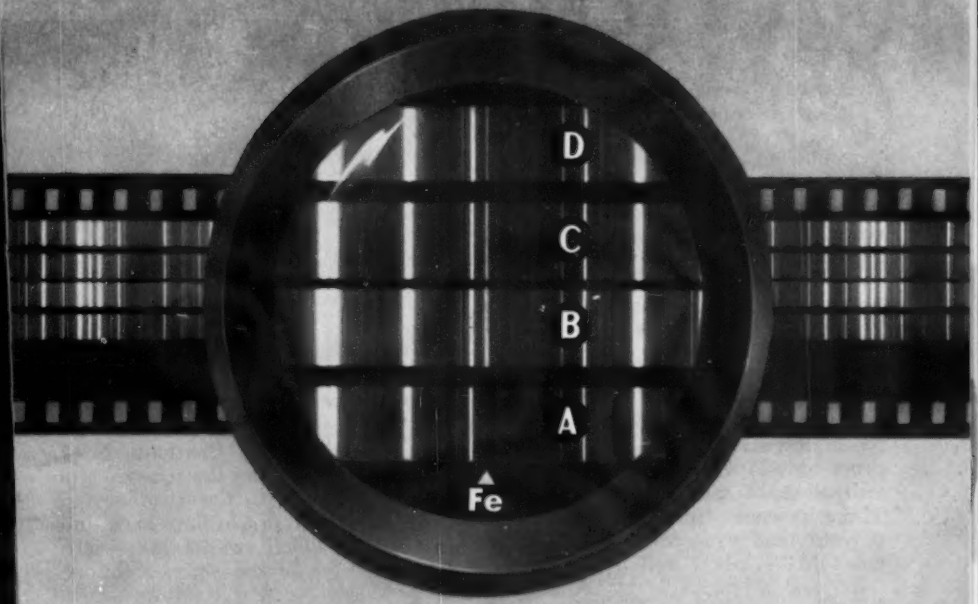
DEAN THERMO-PANEL COIL

which TAKES THE PLACE of pipe coils, didn't exist. The Dean is far superior for phosphating, degreasing, plating, cleaning, drying, etc. Tell us your heat transfer problem.

DEAN THERMO-PANEL COIL DIVISION
DEAN PRODUCTS, INC. 622 Franklin Ave.
BROOKLYN 38, N. Y. Tel. Sterling 9-5400

For more data circle 389 on Postpaid Card

NICKEL SULPHATE



Test After Test PROVES CP's Nickel Sulphate Purer Than ALL OTHER Leading Manufacturers!

In every important category—purity, ease of use and price—CP's Nickel Sulphate gives you benefits far superior to other brands.

For example: The factual and dramatic photograph above offers proof of the purity of our Nickel Sulphate. We had a series of spectrographic tests made using actual production samples of three leading brands plus our own (A). Not only is there a *difference* in purity, but in two cases it is substantial!

If you have never tried our Nickel Sulphate, why not do so now. It consists of fine, uniform, quick-soluble crystals of 22% nickel; has a special non-caking feature and our prices are equal and, in some cases, lower than other brands. Packaged in 6-ply moisture resistant bags. Send for a free test sample, no obligation of course.

CP **COPPER PIGMENT & CHEMICAL WORKS, INC.**

212 BAYWAY, ELIZABETH 2, NEW JERSEY

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timing of all units is attained by use of a master control panel and actuating switch.

Typical Applications: Long or bulky parts, such as aircraft or guided-missile parts. Can be used for delicate lightweight parts. When several of these units are on hand, they can be used in combination or singly to process parts of various lengths.

For more data circle **34** on Reader Service Card

★ ★ ★

pH Standard Solutions

Special buffer solutions made from powders packaged in sealed, vapor-proof envelopes make quick standardization of pH meters possible. These powders, in combination with polyethylene squeeze-type bottles labeled pH 4, pH 7 and pH 9, are offered as a package by Analytical Measurements, Inc., Chatham, N. J. Use of solutions from the squeeze-type bottles discourages the tendency to pour used buffer solutions back into the bottle, which results in possible contamination of the entire solution.

Buffer Solutions: to standardize pH meters

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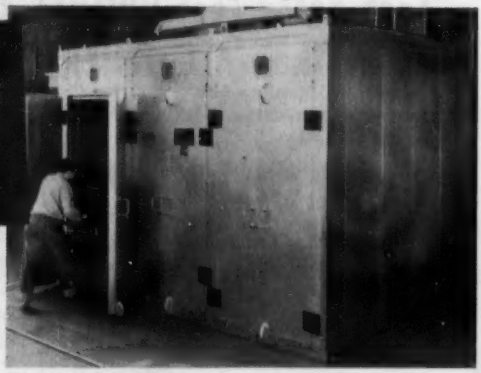
You're SURE of UNIFORM Drying—FAST

ROCKWELL
Recirculating
OVENS

Uniform distribution of controlled, high velocity, recirculated, heated air assures faster drying or baking at precise temperature.

Investigate the oven with the built-in heating "know-how." Write for Catalog.



Made in wide range of standard electric-, gas-, oil- or steam-heated, cabinet, rack or truck types and in special batch or conveyor types.

W. S. ROCKWELL COMPANY 2907 Eliot Street, Fairfield, Conn.

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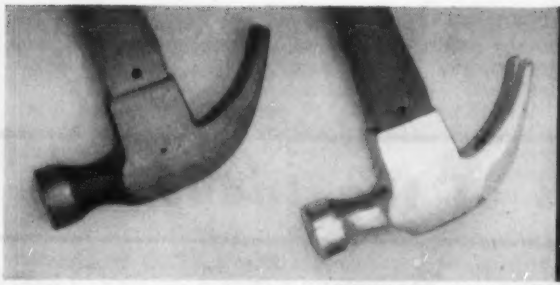
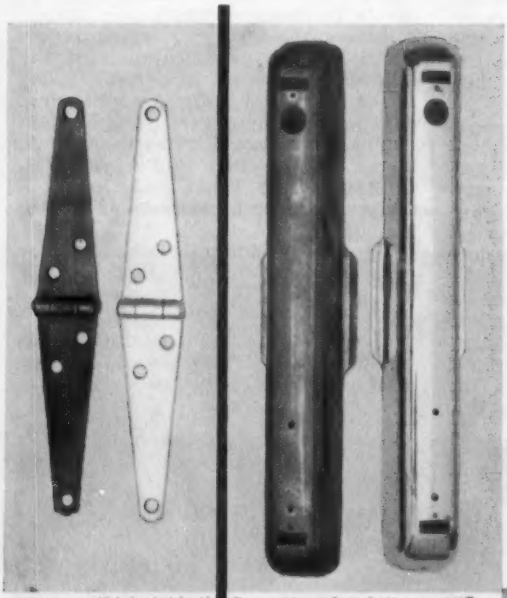


Shelf appeal can be increased for only 3¢

Finishing costs reduced to 12¢

If It Looks Good...It Sells Better



High class look for 4¢

Fluorescent lamp reflector finishing cost cut 62%

If you're looking for a way to increase the sales appeal of your products by adding a quality appearance at low cost, you should investigate vacuum coating.

While this modern process is not a cure-all, most likely you'll find it will add new life to the items you manufacture — and may cut your costs spectacularly, too! Brilliant, eye-catching, metallic finishes, in a wide range of colors, can be applied on plastics, metals, wood, glass, paper, fabrics and many other materials. Today's vacuum coatings are brighter than buffed and polished electroplating, cost less, and in some applications stand up better.

You don't have to take chances, either. Send us a sample of your product and give us details about its use. We'll tell you whether your application is a good one, show you how your product will look, and estimate your costs. Then, if you want, we'll supply a complete installation, guarantee its output, show you how to run it efficiently, and even train your operators. Write us today!

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News of the Industry

New plants . . . company news . . . new positions . . . meetings . . . necrology . . .

NEW PLANTS

Robert J. Huber, president of **Michigan Chrome and Chemical Company,** has announced the breaking of ground at the Grinnell Avenue plant in Detroit for a new 18,000-square-foot laboratory addition.

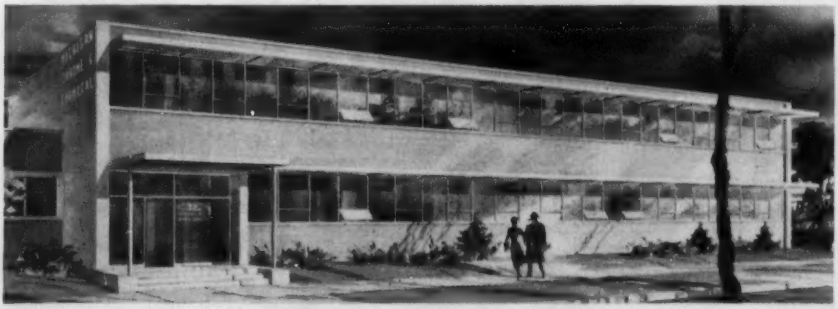
The new quarters will provide laboratory facilities for both the Plating and Chemical Divisions of Michigan Chrome and Chemical Company. Separate laboratories will be assigned to plating control, new products research, chemical products development, and technical service. Facilities will also be provided for a plating pilot plant, devoted to research and development of new plating techniques and processes; and a chemical pilot plant, which will assist in the commercialization of new developments in chemical research.

During the last year, according to Dr. R. M. Lacy, technical director, the following personnel have been added to the laboratory staff: A. C. Lansing, as laboratory manager; Hans K. Neumann, as a research supervisor; R. A. Leger, C. P. Wolski, B. Parsynski, H. G. Bates, Elfio Toldo, and Donald J. Gray, as research chemists or service managers.

The new building is scheduled for occupancy by March 1, 1958.

★ ★ ★

New facilities for the distribution of **Shell Chemical Corporation** industrial chemicals have been opened to



Architect's Drawing of New Laboratory for Michigan Chrome and Chemical Co., Detroit.

serve the Dallas and Fort Worth areas, the company has announced.

The terminal, at 1809 Rock Island in Dallas, will permit delivery on short notice of glycerine in drums, Epon resins, and the complete line of Shell solvents.

The company's salesman, O. D. Walraven, will be at the same address.

★ ★ ★

President C. R. Heagstedt, of the **Tousey Varnish Company,** broke ground recently for the company's new Quad Cities Division Plant at a special ceremony in East Moline, Ill.

This new paint plant will be one of the most modern in the Midwest.

The first unit to be erected will cost approximately $500,000, and will employ about 50 people.

The Tousey Varnish Company was established in 1885 and has been manufacturing industrial finishes continuously since that date. General offices of the company are at 520 West 25th St., in Chicago.

★ ★ ★

Shell Chemical Corporation has announced that it will build a new market development unit at Martinez, California.

L. V. Steck, marketing vice president, said the new unit will make semi-commercial quantities of chemical products and thus facilitate the

Architect's perspective of new plant to be built by Tousey Varnish in East Moline, Illinois

Officials of Tousey Varnish Company participate in ground-breaking ceremonies for new plant

growth of new chemicals from the laboratory stage to production.

★ ★ ★

Pennsalt Chemicals Corporation has announced the formation of a wholly-owned subsidiary in Canada. The new component will be known as **Pennsalt Chemicals of Canada, Ltd.**

William B. Billingsley, who has directed Pennsalt specialty sales in Canada since 1954, has been named vice-president of the new subsidiary and resident manager of its operations. Before joining Pennsalt, Mr. Billingsley was associated with Canadian Industries, Ltd.

★ ★ ★

Lilly Varnish Company of Massachusetts has started production in its new finishes manufacturing plant in Templeton, Mass. The plant, which at present time has an annual capacity of about a half million gallons, embodies latest developments in automatic flow of materials, and uses advanced production equipment.

The new plant is in addition to the Lilly plant and laboratories in nearby Gardner, Mass., and the combined facilities add greatly to the ability of Lilly of Massachusetts to supply enamels and coatings of all kinds to users of industrial product finishes.

COMPANIES

Haveg Industries, Inc., has announced the acquisition of the **Lithgow Chemical Company** of California, manufacturers and applicators of a wide range of corrosion resistant plastic coatings, cements, impregnations, and laminated linings.

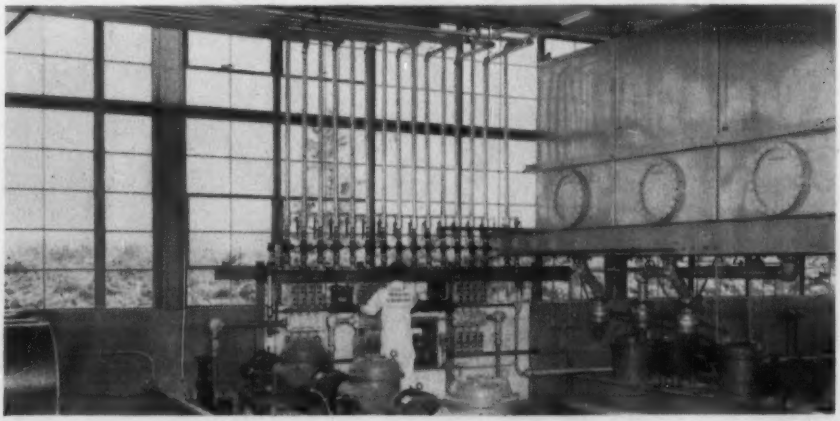
According to Dr. John H. Lux, Haveg's president, the Lithgow organization will be operated as a division of Haveg.

★ ★ ★

Sylvania Electric Products, Inc., has announced that it has changed the name of its Tungsten and Chemical Division to "Chemical and Metallurgical Division."

Marion E. Pettegrew, vice president-operations, said that the new name provides a clearer indication of the broad line of products manufactured by the division.

Sylvania's activities in the field of chemistry and metallurgy include the production of tungsten; molybdenum; germanium and silicon semiconductor materials; phosphors for radio, television and lighting; plated fine wires; and special chemicals.



"Cutting" room of new plant built by Lilly Varnish Company of Massachusetts

General Plate Division of Metals & Controls Corporation has appointed a new distributor for its rhodium plating solutions in the New England area, with the exception of Connecticut. Distribution will be handled by **M. E. Baker Company** of Cambridge.

★ ★ ★

Payment of a complete payroll in silver dollars on Aug. 16 provided a climax to observation of the 25th anniversary of **Tranter Manufacturing, Inc.,** Lansing, Michigan, manufacturer of Kold-Hold truck refrigeration equipment, Platecoil heat transfer units and baseboard radiant heating panels.

More than three tons of shiny new silver dollars were handed to Tranter employees on this unusual payday by Miss Silver Dollar of Reno, Nevada, who flew to Lansing for the occasion. Miss Silver Dollar is Shirley Lou Carpenter, an employee of the famous Harold's Club in the Nevada city.

Final activity of the Silver Anniversary observance in Lansing was the Employee Awards Dinner held in the Lansing Civic Center, where awards were made to 86 employees in recognition of 20, 15 and 10 years of service with the company.

Five persons, including James R. Tranter, president of the company, received awards in recognition of 20 years or more of service. Other 20-year award recipients included **Mrs. Lee S. Worthington,** secretary of the company and director of advertising. **Leonard Huhn, M. M. Brown** and **Max Parker,** production employees. Awards for 15 years of service were presented to 23 employees and for 10 years of service to 58 employees.

Besides **James R. Tranter,** president of the company, officials of the firm include Harry E. Guyelman, executive vice president; Mrs. Lee S. Worthington, secretary and director of advertising; John H. Flewelling, treasurer.

★ ★ ★

American Chemical Paint Company's International Convention was held in Ambler, Pa., during the week of September 23-28.

Thirty-four nations were represented by 77 delegates.

Each delegate was a research, development, or expansion executive of private enterprises in the world-wide chemical field.

Among the American Chemical Paint Company officials who addressed the delegates were Leon Cherksey,

During climax of 25th anniversary celebration held by Tranter Manufacturing, Inc., "Miss Silver Dollar" presents 20-year award to Mrs. Lee Worthington. Other 20-year employees are (l. to r.) M. M. Brown, James R. Tranter, Leonard Huhn, and Max Parker.

chairman of the board; Gerald C. Romig, president; John O. J. Shellenberger, vice president and director of marketing; F. P. Spruance, Jr., vice president, general sales manager of the Metalworking Division; Alfred Douty, director of research; R. H. Beatty, director of agricultural research.

The sessions of the convention were both educational and technical; they detailed the most effective methods developed for the use of established products here in America and abroad as the delegates participated in the exchange of first-hand knowledge of the processes and practices found most successful in the anticorrosion treatment of metals.

A discussion of recent advances in the application of decorative "Alodine," highlighted the convention. This process changes the surface characteristics of aluminum to reduce its reflectivity and corrosion. Decorative "Alodine" changes surface colors of aluminum to predetermined shades of matching greens or natural aluminum particularly adapted to architectural use for interiors and exteriors. The treated aluminum is practically maintenance-free.

The metalworking delegates visited the Ford Plant at Rahway, New Jersey; Vikon Tile in Washington, New Jersey; Enamelstrip Corporation, Allentown, Pennsylvania; Dana Corporation and Doehler Jarvis Co., in Pottstown, Pa.; Vertol Co., Morton, Pennsylvania; U. S. Air Conditioning Corporation and Heintz Manufacturing Co. in Philadelphia. Later in the week many of these delegates journeyed to Philadelphia again for a tour of the Benjamin Foster Company, which slightly over a year ago became a subsidiary of the American Chemical Paint Company. The Foster Company specializes in thermal insulation protective and fire-retardant products.

★ ★ ★

The Equipment Division of **Wagner Brothers Inc.**, Detroit, has been appointed distributor for corrosion-resistant lining materials manufactured by **Kaykor Industries Inc.**, Yardville, N. J.

The lining materials, of unplasticized polyvinyl chloride, resist a broad line of corrosive acids and alkalies.

★ ★ ★

Temco Aircraft Corporation has granted an exclusive license to **Delco Chemicals, Inc.**, Los Angeles, for the patented Ti-Brite process of removing oxide scale from titanium.

Under the agreement, Delco will handle licensing of the process.

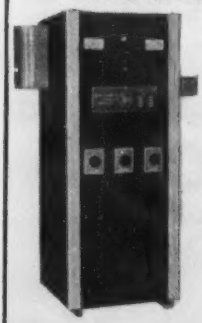
Temco's materials and process laboratories developed the electrolytic Ti-Brite method, which removes scale so delicately that machining marks are still visible on parts after they have been through the treatment.

★ ★ ★

Pressurized spray paint, 22.5 million units of which were sold in 1956, may take over a much larger share of the small-package paint market in the next few years, with annual sales of 75 to 100 million units probable by 1967, the **Du Pont Co.** estimates.

Basing their growth estimates on a

GERMANIUM
rectifiers



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Catalog available on request

95% Efficiency at full load is standard with the new RAPID GERMANIUM RECTIFIERS.

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nationwide survey, the company's "Freon" Products Division noted that sales of paint in half-pint and smaller cans have decreased over the last five years while in the same period sales of aerosol paints have increased 500 per cent. The smaller size cans, especially useful in touch-up work, are estimated to account for five to 10 per cent of the current consumer market for paint.

Du Pont's survey shows that users, once they have tried an aerosol paint, prefer it two-to-one over the brush method of application. Although not suited economically for finishing large surfaces, the aerosol paints do difficult jobs easier, faster, and more efficiently than conventional methods, they say.

★ ★ ★

Blakeslee, one of the oldest builders of automatic industrial washers and degreasing machines, and **Branson,** well-known in the field of ultrasonic equipment, have joined forces to design, sell, and service an advanced line of ultrasonic cleaning machines.

G. S. Blakeslee & Company (Chicago, Ill.), which has been building washers and degreasers for over fifty years, is now incorporating Sonogen* generators and transducers whenever ultrasonic equipment is required.

Ultrasonic washers and degreasers using Branson equipment will be available exclusively through Blakeslee in a wide range of sizes, from small manually-operated units in standard sizes to large custom-built conveyorized automatic machines. For applications not requiring cleaning machines, the ultrasonic equipment is available directly from Branson.

For further information concerning ultrasonic washers and degreasers, write to **G. S. Blakeslee & Company,** Cicero Station, Chicago 50, Ill. For data on the ultrasonic cleaning devices themselves, write to **Branson Ultrasonic Corporation,** 40 Brown House Rd., Stamford, Conn.

*Registered Trade Mark, Branson Ultrasonic Corp.

The Du Pont Company's finishes division has recently set up a new technical service sales section to be devoted exclusively to industrial maintenance painting. The new unit will offer specialized assistance in the petroleum, steel, marine fields, and to contracting painters doing industrial work.

Frank Smith, formerly regional industrial manager in Kansas City has been appointed to head the section.

Newly created Du Pont Finishes Division's Industrial Maintenance Sales Section, which will provide technical service on industrial maintenance painting to the petroleum, steel and marine industries, also to contract painters doing industrial work. (Left to right) Jack Graham, Herb Norton, Frank Smith, Tom Robertshaw and Leo Hoellen.

Jack Graham will be district manager in Philadelphia; **Herb Norton** is appointed to Atlanta; **Tom Robertshaw** receives the Chicago post; **Leo Hoellen** goes to Kansas City.

Mr. Smith's staff also includes **Jack Rode,** product manager, and **Bob Bradley,** maintenance specialist.

★ ★ ★

United States industry's solution to stepped-up overseas sales may be not increased exports, but the licensing of companies in the countries to be served to produce the U. S. firms' products, according to **L. K. Lindahl,** chairman of the board of directors of **The Udylite Corporation.**

Just back from a London meeting

L. K. Lindahl

of his company's distributors for Europe and Great Britain, Mr. Lindahl cited Udylite's experience as indicative of progress to be made by licensing foreign concerns. The Udylite Corporation has achieved a dominant position in the world market by adopting this policy.

Electro - Chemical Engineering Co., Ltd., known throughout the territory as "Efco-Udylite," is the overseas distributing organization. Some equipment produced by the parent company in the U. S. is sold abroad but most foreign sales involve machinery manufactured to home office specifications in other countries, and supplies purchased on the world market or produced in Europe. The Udylite machines sold in Europe, Africa, India and Australia are manufactured in England, West Germany and France.

Mr. Lindahl believes world conferences of business and technical men, such as the one just held by Efco-Udylite, do much to cement relations between free world nations. He pointed out that at the London meeting representatives of nearly a score of nations freely exchanged ideas and technical information gleaned from years of costly independent research. All technical papers were read and printed in English.

Mr. Lindahl reported that while in Europe he spent four weeks visiting major industrial establishments in six countries. He was deeply impressed by the new enthusiasm and aggressiveness exhibited by top management everywhere he went.

"Many of the new, modern plants I visited would astound many American manufacturers," he said. "But what made the greatest impact on me was the attitude of management. These European industrialists are working hard and intelligently, facing competition, and making genuine bids for their share of the business wherever the existing monetary system permits.

"During recent years, many of these companies have had the foresight to make huge capital expenditures necessary to achieve a high degree of automation. Today they are reaping the benefits."

★ ★ ★

A week-long conference designed to complete the integration of the sales and engineering staffs of **The DeVilbiss Company** and its newly acquired subsidiary, **Newcomb-Detroit Company,** was held recently under the direction of H. M. Kidd, vice president-sales.

Approximately 60 key sales and engineering officials of the two companies attended.

Initial sessions of the conference were held at the Catawba Cliffs Beach Club, near Port Clinton, Ohio.

JOB SECURITY

"My superiors at Pratt & Whitney were very impressed with the contents of my textbooks. Your course was instrumental in getting me my present position and I am working with more confidence and peace of mind because all this means security and a better life for my family," writes plater Leo Vallieres. You too can have more job security with ELECTROPLATING KNOW HOW under your hat! Write **Dr. Joseph B. Kushner, Electroplating School, Stroudsburg 80F, Pa., today!**

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The next two days were largely devoted to the presentation of the Newcomb-Detroit line by A. L. Newcomb, president, J. W. Cornelius, general sales manager, and others of their staff.

Activities were then shifted to Toledo, where Newcomb-Detroit and other personnel were schooled in DeVilbiss products and processes. The balance of the week was spent in these and other business sessions.

★ ★ ★

Acoustica Associates, Inc. has named the following companies and representatives to represent them:

Robert C. McKinney, of Allied Components, Inc., P. O. Box 10203, Dallas 7, Texas, will represent the company in Oklahoma and Texas.

N. H. Rogers, Puro Chemicals, Inc., 1643 St. Clair Ave., Cleveland 14, Ohio, will represent Acoustica in Toledo, Cleveland, Akron, Youngstown, Canton, Mansfield, Lima and their outlying territories, with the exception of Columbus, Dayton, Cincinnati and certain other counties.

Don R. Lind, 135 North Terrace Drive, Wichita 8, Kansas, will represent the company in Kansas, Colorado, Missouri and New Mexico.

John Wild, of Wild & Associates, Box 297, Roslyn, New York, will be the exclusive representative for the Acoustica Liquid Level Sensors in the states of Connecticut, Delaware, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Washington, D. C.

★ ★ ★

Wagner Brothers Inc., Detroit, producers of chemical supplies and automatic plating machines, has purchased the **Automatic Molding Machine Co.** of Los Angeles, Calif., including patent rights to the firm's automatic compression and injection molding presses for plastics, J. R. Wagner, president, has reported.

According to Mr. Wagner, the West coast plant will continue to operate at its present site. However, he says, the recently developed press, built in sizes from 10 to 100-ton capacities, will be marketed on a nation-wide scale.

★ ★ ★

Cowles Chemical Company of Cleveland, Ohio, is now producing diethyltoluamide, a new insect repellent developed by the Army Quartermaster Research Laboratories and the United States Department of Agriculture earlier this year, according to Frank F. Black, manager of organic chemical sales.

★ ★ ★

Celebrating their 22nd anniversary, employees of the **American Buff Company** toasted their company's growth at a special party.

In a short talk, Chairman of the Board Ben P. Sax traced the company's history from a small shop, servicing but a small segment of the trade, to today's position as a large manufacturer of buffs and polishing wheels for every metal finishing operation.

Following his annual custom, Mr. Sax presented each of the company's employees with a canvas money bag containing 22 silver dollars—one for each year of American Buff Company's existence.

American Buff celebrates 22nd Anniversary

The **Naz-Dar Company** has announced the opening of a manufacturing and sales subsidiary in Canada. The new company, named **Naz-Dar Canada, Ltd.**, (formerly Graphic Screen Supplies, Ltd.), will have headquarters in Toronto, at 468 Gilbert.

Canadian operations for this manufacturer of silk screen inks and supplies will be directed by **J. V. O'Brien**, former head of Graphic Screen Supplies, Ltd.

★ ★ ★

Purchase of facilities for the manufacture and distribution of DeVilbiss spray painting and finishing equipment in Sao Paulo, Brazil, has been announced by Howard P. DeVilbiss, president of **The DeVilbiss Company.**

A controlling interest in Matrix, S.A., a tool and die manufacturing firm in Sao Paulo, has been obtained by DeVilbiss, Mr. DeVilbiss said.

Jose L. Ribeiro, a graduate engineer, has been named managing director of the company. He has previously been associated with his father Noe Ribeiro, one of Brazil's leading engineers, in Matrix, S.A., who will remain connected with the company in a consultant capacity. Mr. Ribeiro has spent considerable time in the United States acquainting himself with the American production methods and was for a time associated with the Allis-Chalmers Company.

Mesbla, S.A., which has been sales representative for DeVilbiss in Brazil for 30 years, will be in the company, according to the announcement.

A recent feature article in the Evansville, Indiana, *Courier and Press* describes the activities of the **Red Spot Paint and Varnish Company's** Research Center.

In addition to describing the company's efforts in producing specialized paint for application on plastics, the article tells about the company's interest in paints for use prior to and after application of finishes by vacuum metalizing. The company's research center is equipped with its own vacuum metalizing apparatus so that these finishes can be checked on the spot. The company formulates many specialized organic finishes for use in vacuum metalizing.

Officials of the Evansville, Indiana, firm are Harry B. Bourland, president, and Milton Z. Thorson, who is vice president.

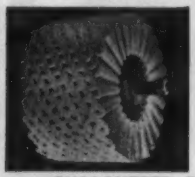
NEW POSITIONS

James R. Schaffner has joined the staff of **Schaffner Manufacturing Co., Inc.,** Emsworth, Pittsburgh 2, Pa. Mr. Schaffner is now participating in the company's research program. Upon completion of his training, he will join the sales force, under the direction of Paul E. Schaffner.

★ ★ ★

Universal Paint & Varnish, Inc., Bedford, Ohio, has announced the appointment of **B. C. O'Keefe** as industrial sales representative.

Buff Cooler, Faster with 45° Spoke Buffs



Patented mounting maintains best cutting angle of 45° for faster, smoother cutting with less pressure. Ventilation from 24 openings. We also mfg. all types of buffs.

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Carl C. Clabaugh, manager, Metal Finishing Chemicals Department of **Cowles Chemical Company,** Cleveland, Ohio, has announced three appointments to the company's staff. **Arthur H. Coapman, Wilbert M. Radtke** and **Homer E. Welch** have been selected as Cowles technical men.

Arthur H. Coapman has been selected to handle the sales and services of Cowles products in Detroit.

Wilbert M. Radtke will be in charge of the sales and services in Indiana, with headquarters in Indianapolis.

Homer E. Welch will handle the sales and services of the company's line in outstate Michigan.

H. E. Welch

W. M. Radtke

A. H. Coapman

Robert G. Hall

Pangborn Corporation, Hagerstown, Md., manufacturer of blast cleaning and dust control equipment has announced appointment of **Robert G. Hall** as blast descaling representative. In his new position, Mr. Hall will work on all descaling applications.

★ ★ ★

Herbert L. Simmons, president and treasurer of **Sarco Company, Inc.,** New York City, has been named chairman of the Plumbing and Heating Division of Muscular Dystrophy Associations of America, Inc.

Mr. Simmons will organize support among firms and individuals in the heating industry for the 1957 MDAA campaign for funds to support research into the crippling, fatal disease which afflicts more than 200,000 Americans, most of them children.

★ ★ ★

Election of **Edwin T. Asplundh** as board chairman of the **Pittsburgh Plate Glass Company** has been announced by the corporation. He succeeds **Harry B. Higgins** who is retiring from the position of board chairman and chief executive officer. **David G. Hill,** president of the corporation since 1955, will continue in that ca-

pacity and assume the additional duties of chief executive officer.

Felix T. Hughes has been elected vice president of the merchandising division succeeding **Donald C. Burnham,** who retires.

★ ★ ★

T. Curtis McKenzie, president of **Klem Chemicals, Inc.,** Dearborn, Michigan, has announced the appointment of **Edwin E. Stalo** as Indiana representative.

★ ★ ★

Robert E. Frey, for the past six months assistant works manager-operations of **Diamond Alkali Company's** Painesville Plant, has been named to the newly created position of assistant works manager.

At his new post Mr. Frey will be concerned with employees and public relations as well as operations at Diamond's largest and oldest plant, Mr. Kirp said.

★ ★ ★

Donald Williams, vice president and director of sales, has been appointed to the newly created position of director of Corporate Relations for **The Dow Chemical Company.**

Mr. Williams will have the responsibility of developing and directing a new Corporate Relations Department to be concerned with all the company's relationships with other firms, including those in the chemical and allied industries, Dow customers and potential customers and suppliers.

"GRIPALLOY"

. . . Attractive satin sheen ETCHING PRIMER in black and colors . . . Often used as finish coat . . . Air dries in minutes . . .

. . . Amazing tight adhesion to 25 different metals as reported by a large electrical manufacturer.

. . . Excellent resistance to Salt Spray, Gasoline, and Solvents . . .

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Synthetics—Vinyls

For more data circle 398 on Postpaid Card

Dow has also announced the promotion of **Eugene L. Martinez** to manager of its Boston sales office and **E. H. Killheffer, Jr.,** to succeed Mr. Martinez as manager of the Buffalo sales office. Mr. Martinez, manager at Buffalo since 1955, succeeds A. A. Lawrence who resigned after 17 years with the company.

★ ★ ★

Donald K. Ballman, general sales manager of **The Dow Chemical Company** since 1949, has been promoted to the position of director of sales. He succeeds **Donald Williams,** who recently was appointed director of Corporate Relations.

William R. Dixon has been appointed general sales manager. Mr. Dixon has served as assistant general sales manager since 1951.

★ ★ ★

Comco, Inc., division of Enthone, Inc., New Haven, Conn., a subsidiary of American Smelting and Refining Company, has announced the appointment of **Avery Smith** as assistant to the general manager, J. J. Martin, Jr.

Mr. Smith will assist in the preparation of proposals for plating room equipment such as plating tanks, barrels, plating racks, polyvinyl chloride exhaust systems and fabrications, and will fulfill a liason function between customers' requirements and Comco facilities.

★ ★ ★

Apex Alkali Products Company, Philadelphia, Pa., has announced the election of **William B. Bauzenberger** to the position of vice president in charge of sales.

Wm. Bauzenberger

Mr. Bauzenberger has been associated with Apex Alkali for 14 years, his most recent position having been sales manager of the company.

A. E. S. 45TH ANNUAL CONVENTION,

Sheraton-Gibson Hotel, Cincinnati, Ohio, May 18-22, 1958

"Progress Through Education"

Host Branch Co-Chairman Ezra A. Blount (far right) and Chairman Charles Wise (2nd from right) discuss details concerning Program for 45th Annual A. E. S. Convention with Committee Chairmen at recent meeting of entire Committee for the 1958 meeting.

The Host Branch Committee for the 45th Annual A. E. S. Convention (to be held in Cincinnati May 18-22, 1958) met recently to discuss plans for convention. Shown (left to right) are William Young, M.F.S.A. representative; Robert K. Rarick, Finance; Edwin Roof, Registration; W. Wilson Loveless, Hotel; A. R. Waters, Banquet; Roger Winterman, Program; David L. Kaplan, Secretary; Charles Wise, Chairman; Ezra A. Blount, Co-Chairman; Stewart Chipman, Entertainment; William B. Stephenson, Jr., Educational; L. J. Howald, Publicity; Ray A. Barry, Plant Visitation; Mrs. Robert D. Miller, Ladies Committee; Mrs. William Young, Ladies Committee; Arthur J. Gerada, in charge of the Outing.

MEETINGS

The **Detroit Branch** of the **American Electroplaters Society** will hold its **Annual Meeting,** National Officers' Night, in the Statler Hotel, Detroit, on December 6, at 8:00 P.M.

Francis T. Eddy, Technicraft Laboratories, Inc., Thomaston, Conn., president of the American Electroplaters' Society, will serve as technical chairman for the meeting.

Speaker for the meeting will be **Dr. W. A. Wesley,** International Nickel Company, third vice president of the A.E.S. Dr. Wesley will discuss "Nickel chromium versus the atmosphere."

On Saturday evening, December 7, the **20th Annual Detroit Branch Dinner Dance** will be held. This event begins at 7:00 P.M. in the Hotel Statler. **Carl O. Durbin,** Chrysler Corp., is general chairman for this event.

★ ★ ★

The **New York Branch** of the **American Electroplaters' Society** will hold its Annual Educational Session and Banquet February 1, 1958, in the Penn Top of the Hotel Statler at 8:00 P.M. The Technical Session will be held in the afternoon at 2:30 P.M.

Educational Chairman **Arthur Carlson** has arranged an outstanding program which is as follows:

Research in Electrodeposition in Progress at the National Bureau of Standards, by **Dr. Abner Brenner,** director, Electrochemicals Div., National Bureau of Standards, Washington, D. C.

Recent Developments in Bright Leveling Nickel Deposits, by **Dr. Myron Diggin,** technical director, Hanson-Van Winkle-Munning Co., Matawan, N. J.

Seeing Plating Solutions in Action, by **Dr. Walter R. Meyer,** president, Enthone, Inc.

John Melhado is chairman of the Ladies Program.

Dick Hartman is chairman of the Entertainment Committee.

Christmas lives in the joy and satisfaction of the giver . . .

and in the delight and thankfulness of those who receive.

Buy and use Christmas Seals

SOCIETIES

W. W. Loveless

W. Wilson Loveless has been named 1958 general convention chairman of the **National Association of Metal Finishers.**

Mr. Loveless, who is vice president of Varland Metal Service, Inc., Cincinnati, Ohio, will be responsible for the planning of this organization's convention to be held at the Sheraton-Gibson Hotel, Cincinnati, May 18 and 19, 1958.

TRAINING COURSES

Nordson Corporation (formerly Bede Products Corp.), Amherst, Ohio, manufacturer of airless spray painting equipment, has announced the company's training school schedule for the winter months.

Training and instruction classes for the operation and maintenance of Bede airless spray coating equipment will meet on the following days during the winter season: December 10-

13; January 7-10; February 11-14; March 11-14.

School sessions will start promptly at 9:30 A.M. on the first day of the scheduled training course, and at 8:30 A.M. on each succeeding day.

For additional information, those desiring to attend classes should write to R. T. Schafer, assistant to the president, Nordson Corporation, Amherst, Ohio.

★ ★ ★

The course of study in electroplating given at the **Fort Greene Evening High School,** 29 Fort Greene Place, Brooklyn, N. Y., (formerly Brooklyn Evening Technical High School) will begin its Spring Term on February 3, 1958.

The session is divided into classroom discussion and laboratory experiments. The classroom topics will include simple calculations, reading graphs, chemistry of the plating tank, pH, wetting agents, pitting, and deionizing. The laboratory experiments will include solution analysis, Hull cell studies, and anodizing.

Registration begins January 27, 1958, and will be held daily thereafter from 7:00 to 9:00 P.M. Classes will meet on Monday and Wednesday from 6:45 to 8:15 P.M. including about six Fridays. Register with L. Serota in Room BW17 or 3E10.

NECROLOGY

Chester L. Lancaster, age 53, **Electric Auto-Lite Company** vice president and manager of the Bumper Division at Sharonville, Ohio, died June 26 in Cincinnati, Ohio.

Mr. Lancaster joined the old Corcoran-Brown Lamp Division at Cincinnati in 1927 as a student engineer. In 1935, he was transferred to the Woodstock, Illinois Plant as a chemical electroplating engineer and in 1937, he was named manager of the Bumper Division. Mr. Lancaster was named a vice president of the company in 1950.

Ray Parker, only recently appointed as eastern Michigan representative for American Buff Co., Chicago, died October 13, after a heart attack. His untimely death closed a life brimming with activity and interest in both the metal finishing industry and leisure sports.

★ ★ ★

Dr. Paul Dyer Merica, who retired as president of **The International Nickel Company of Canada, Limited,** in April, 1954, but continued to serve the company on important projects and as consultant to the officers, died on Sunday evening, October 20, at the Phelps Memorial Hospital in Tarrytown, N. Y., where he had been taken following a heart attack at his home on Friday evening, October 18. He was 68.

MEETINGS of INTEREST to FINISHERS

Dec. 6-7. Annual Educational Session and Banquet, Detroit Branch, A.E.S., Hotel Statler, Detroit, Mich.

Dec. 14. Annual Banquet and Christmas Party, Newark Branch, A.E.S., Hotel Robert Treat, Newark, N. J.

Jan. 11. Interim Meeting, A.E.S., Hotel Marrott, Indianapolis, Ind.

Jan. 25. 45th Annual Educational Session and Banquet, Chicago Branch, A.E.S., Conrad Hilton Hotel, Chicago, Illinois.

Feb. 1. Annual Educational Session and Banquet, New York Branch, A.E.S., Hotel Statler, New York, N. Y.

Feb. 3-6. National Industrial Electric Heating Conference, Netherland-Hilton Hotel, Cincinnati, Ohio.

Feb. 10-14. Committee Week, American Society for Testing Materials, Statler Hotel, St. Louis, Mo.

Feb. 14-15. Third Annual Technical Session and Banquet, Southeastern Branch, A.E.S., Dinkler Plaza Hotel, Atlanta, Ga.

May 19-22, 1958. 45th Annual Convention, A.E.S., Hotel Sheraton-Gibson, Cincinnati, Ohio.

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PRODUCT LITERATURE

55. Spray-Bake Machine
Descriptive folder on Capitol high-speed electric spray bake conveyor machine. The Capitol Machine Co., 36 Balmforth Ave., Danbury, Conn.

56. Buffers and Polishers
Catalog describes V-belt driven buffers and polishers. Hisey-Wolf Machine Co., 352 Mt. Hope Ave., Cincinnati 4, Ohio.

57. Spray Masks
Information on die-cut masks, caps and plugs for protecting specific shapes and depressions from paint spray. By-Buk Company, 4314 W. Pico Blvd., Los Angeles 19, Calif.

58. Chromate Coatings
Handy reference file describes various types of chromate conversion coatings. Allied Research Products, Inc., 4004-06 E. Monument St., Baltimore 5, Md.

59. Barrel Finishing Equipment
Literature on the Futurama Series of barrel finishing equipment. Speed-D-Burr Corporation, 3613-e San Fernando Rd., Glendale 4, Calif.

60. Portable Platers
Data sheet describes Rapid Portable Platers, which can be used to apply light or heavy coatings on individual surfaces. Rapid Electroplating Process, Inc., 1414 S. Wabash Ave., Chicago 5, Ill.

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61. Buffs
Data on buffs with patented centerless construction. American Buff Co., 2414 S. LaSalle St., Chicago 16, Ill.

62. Automatic Polishing Equipment
Literature describes a complete line of automatic polishing and buffing machines. Acme Manufacturing Co., 1400 E. Nine Mile Rd., Detroit 20, Mich.

63. Activated Carbon
Data on improving quality of deposits by filtering solutions through Darco activated carbon. Chemicals Div., Atlas Powder Co., Wilmington 99, Del.

64. Booth Coating
Liquid Envelope No. 49-36 Lo-Vis is a strippable spray booth coating that sprays fast, dries fast, can be used in low-pressure equipment. Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J.

65. Washing Machines
Catalog describes a complete line of washing and metal surface treatment machines. G. S. Blakeslee & Co., 1844 S. Laramie Ave., Chicago 50, Ill.

66. Multicolor Finish
A color card containing 34 color swatches of "Tweed" multicolor textured finish shows the wide variety of combinations available. Multicolor "Tweed" one-coat plastic spray coating is for use on wood, metal, plaster, masonry and dry wall. Raffi and Swanson, Inc., 101 Eames St., Wilmington, Mass.

67. Cable Conveyors
Bush-Lock Cable Conveyors negotiate sharp turns (7½-inch radius) and make possible a very short dip, if desired. The E. W. Buschman Co., 4516 Clifton Ave., Cincinnati 32, Ohio.

68. Drying Ovens
Data on various types of paint-drying ovens. The Carl Mayer Corp., 20800 Center Ridge Rd., Cleveland 16, Ohio.

69. Buffs
Catalog illustrates complete line of buffs, including the new Churchill Finger Buff No. 501, designed especially for cutting and coloring stainless steel and die castings of irregular shape. Geo. R. Churchill Co., Inc., Dept. PF, Hingham, Mass.

70. Copper Anodes
Information on advantages of using OFHC Copper Anodes in electroplating. The American Metal Co., Ltd., 61 Broadway, New York 6, N. Y.

71. Rhodium Plating
Literature on rhodium plating solutions. Sigmund Cohn Mfg. Co., Inc., 121 S. Columbus Ave., Mount Vernon, N. Y.

72. Spray Decorating
Literature describes complete line of spray-decorating machines and masks. Conforming Matrix Corp., 356 Toledo Factories Bldg., Toledo 2, Ohio.

73. Alkaline Cleaner
Technical bulletin describes performance features of Cowles QC cleaner. Cowles Chemical Co., 7016 Euclid Ave., Cleveland 3, Ohio.

74. Barrel Finishing Machine
Data sheet explains advantages of the 3000 Series Burr-Rite, Sr., a barrel finishing machine that is useful for small to medium-large production runs. Globe Div., Casalbi Co., 546 Wayne St., Jackson, Mich.

75. Primer
Information on Sea-Lac RV 3389 Alloy Primer, formulated to give good bonding properties on cadmium, zinc, galvanized steel, aluminum, other metals. Duralac Chemical Corp., 84 Lister Ave., Newark 5, N. J.

76. Electrolytic Stripper
Information on Enstrip 1-88, a completely prepared, acid electrolytic stripper for removing copper, nickel, chromium, brass, bronze, iron and white brass from zinc-base die castings. Enthone, Inc., Dept. PF, 442 Elm St., New Haven 11, Conn.

77. Buffing Compounds
Catalog describes a complete line of buffing compounds in bar, tube and liquid forms, suitable for all types of metal, plastics and lacquers. Formax Mfg. Corp., Detroit 7, Mich.

78. Radiant Heat
"Applications Unlimited," a fact-filled booklet that shows how many plants have solved problems with radiant heaters. Fostoria Pressed Steel Corp., Dept. 1222, Fostoria, Ohio.

79. Electrostatic Spray
A 16-page booklet tells about the Ransburg No. 2 Process: how it works, advantageous results, typical applications, equipment and facilities required. Ransburg Electro-Coating Corp., Indianapolis 7, Indiana.

80. Portable Plating Barrels
Information on Stutz Portable Barrel Plating Machines. The Stutz Co., 4410 Carroll Ave., Chicago 24, Ill.

81. Tack Cloth
Wiping with a tack cloth just prior to application of a paint finish aids in reducing rejects caused by dirt and blemishes in the finish. Bond Chemical Products Co., 2639 N. Clybourn Ave., Chicago 14, Ill.

82. Cutting Barrel
Literature on Hartford's new enclosed cutting barrel. Hartford Steel Ball Co., 121 Jefferson Ave., W. Hartford 6, Conn.

83. Electrostatic Spray
Literature describes Ionic Centrifugal atomizer for electrostatic spraying of conveyorized parts. Ionic Electrostatic Corp., 111 Monroe St., Garfield, N. J.

84. Conveyorized Paint Finishing
Portfolio of data bulletins shows how others in the finishing industry have improved products and production by installing a complete finishing system. Geo. Koch Sons, Inc., Evansville 4, Ind.

85. Chainless Conveyors
Bulletin LS-1 describes advantageous features of Landahl Chainless Conveyors. Landahl Chainless Conveyor Co., Subsidiary of the American Monorail Co., 13142 Athens Ave., Cleveland 7, Ohio.

86. Metal Treatment Chemicals
Folder describes full line of black oxide finishes, chromate coatings, cleaners, oils, and strippers. Heatbath Corp., Springfield 1, Mass.

87. Waste Treatment and Recovery
Information on ion-exchange equipment for waste treatment and recovery of metals. Wastes can be treated to reduce volume, eliminate toxicity, and recover pure water. Chromic acid and precious metals can be recovered from rinse waters. Aluminum can be recovered from anodizing solutions. Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.

88. Baking Ovens
Catalog describes and illustrates typical paint drying and baking installations. Lanly Co., 760 Prospect Ave., Cleveland, Ohio.

89. Finishing Processes
A comprehensive, 16-page manual, describing in detail 57 chemical processes. Among the chemical processes discussed in the manual are cleaning, phosphatizing, conversion coating, protective coating, paint and carbon removing, rust removing and preventing, descaling, electroplating, inspecting, processing aluminum and maintaining of paint departments and other plant facilities. Reference charts include: conversion factors, decimal equivalents, measuring surface areas, tank capacities, Fahrenheit-Centigrade conversion chart, phosphatizing reference chart, table of drop in air pressure, energy required to heat water and properties of saturated steam. Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

90. Cold Stripper
Information on Lea Coldstrip, a nontoxic stripper used at room temperature to remove organic finishes. The Lea Manufacturing Co., 16 Cherry Ave., Waterbury 20, Conn.

91. Painting Systems
Catalog A-657 describes integrated, complete, paint finishing systems. R. C. Mahon Co., Detroit 34, Mich.

92. Bright Cyanide Copper
Literature describes the new M & T Bright Cyanide Copper Process, which incorporates new addition agents for stability and dependable operation. Metal & Thermit Corp., Rahway, N. J.

93. Abrasive Belts
Catalog lists abrasive belts by type, size, and application. Michigan Abrasive Co., 11910 E. Eight Mile Rd., Detroit 5, Mich.

94. Polishing-Grinding Wheel
Production reports on the PG Wheel, a polishing and grinding wheel composed of leaves of coated abrasive cloth. Minnesota Mining & Manufacturing Co., Dept. FH-127, St. Paul 6, Minn.

95. Vacuum Coaters
Data file on vacuum coaters includes descriptions and illustrations of NRC vacuum metalizing equipment. NRC Equipment Corp., Dept. 23-H, 160 Charlemont St., Newton 61, Mass.

96. Spray Phosphatizing
Bulletin 55-137 describes the Phosteem Process, used to apply phosphate coating to large, bulky equipment that cannot be dipped. Neilson Chemical Co., 2302 Gainsboro, Detroit 20, Mich.

97. Centrifugal Dryer
Illustrated 4-page folder describes Model 20 New Holland Kreider Centrifugal Dryer, which spin-dries small parts in as little as 15 seconds. New Holland Machine Co., Dept. F-1257, New Holland, Pa.

98. Clear Lacquer
Information on Nikolas 2105 Clear Lacquer, for protecting plated finishes from oxidation, marring, and discoloration. G. J. Nikolas & Co., Inc., 2880 Washington Blvd., Bellwood, Ill.

99. Barrel Finishing Abrasives
Information on four different Tumblex Abrasives for use in barrel finishing. Norton Co., Worcester 6, Mass.

100. Fume and Odor Elimination
Information on equipment that can be installed on baking ovens to eliminate fumes and odors from exhaust air and recover useable heat at the same time. Oxy-Catalyst, Inc., Industrial Division, Wayne, Pa.

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101. Automatic Polishing Machines
Information on automatic polishing and buffing machines. The Packer Machine Co., Meriden, Conn.

102. Blast Cleaning
Bulletin 1403 describes Pangborn Hydro-Finish Equipment. Pangborn Corp., 5000 Pangborn Blvd., Hagerstown, Md.

103. Finish, Then Form
Data on phosphate coatings and how they can aid in allowing metal to be finished in strip form and then formed into the desired shape without damaging the paint film. Parker Rust Proof Co., 2172 E. Milwaukee Ave., Detroit 11, Mich.

104. Painting Zinc
Data on obtaining better paint adhesion on zinc surfaces with the Fosbond metal preparation process. Pennsalt Chemicals Corp., Dept. 468, 3 Penn Center, Philadelphia 2, Pa.

105. Spray Booths
Information on Hydro-Whirl paint spray booths. Peters-Dalton, Inc., 17908 Ryan Rd., Detroit 12, Mich.

106. Chromate Coatings
Technical information on chromate coatings, their application and use. Promat Div., Poor & Co., 851 S. Market St., Dept. PF-3, Waukegan, Ill.

107. Ultrasonic Cleaning
Information on ultrasonic cleaning equipment. Ramco Equipment Corp., Div. of Randall Mfg. Co., Inc., 811 Edgewater Rd., New York 59, N. Y.

108. Ovens
Catalog describes and illustrates various types of baking ovens. W. S. Rockwell Co., 2907 Eliot St., Fairfield, Conn.

109. Pearlescent Finishes
Data on synthetic pearl essence for baking or air-dry applications. Rona Laboratories, Inc., East 21st and East 22nd Sts., Bayonne 4, N. J.

110. Filter for Corrosives
Information on Sethco Model LSIN-20V filter pump, designed to be used for filtering corrosive plating solutions. Sethco Mfg. Co., 2292 Babylon Turnpike, Merrick, L. I., N. Y.

111. Planning to Paint a Pyramid?
The story of Epon-resin-based coatings. Shell Chemical Corp., Chemical Sales Div., 380 Madison Ave., New York 17, N. Y.

112. Spray Nozzles
Catalog 24 describes spray nozzles of various types and sizes, for washing, coating, and rinsing applications. Spraying Systems Co., 3229 Randolph St., Bellwood, Ill.

113. Primers
Data sheets on Stantite Primers, formulated to prevent oxidation of non-ferrous metals and corrosion creep on ferrous metals. Has good bonding qualities, dries quickly. Stanley Chemical Co., Dept. J, 1468 Berlin St., East Berlin, Conn.

114. Vacuum Metalizing Filaments
Information on high-density tungsten strands, designed to be used in vacuum metalizing. Sylvania Electric Products, Inc., Tungsten and Chemical Div., Towanda, Pa.

115. Brass Plate
Technical bulletin describes True Brite Brass Solution, available in various formulations, to produce almost any color of brass desired. True Brite Chemical Products Co., Box 31, Oakville, Conn.

116. Automatic Plating Machines
Information on Udylite full-automatic plating machines. Udylite Corp., Detroit 11, Mich.

117. Addition Agents
Information on Isobrite plating addition agents that produce plating of uniform brightness. Copper, nickel, zinc, cadmium and white brass. Wagner Bros., Inc., 400 Midland Ave., Detroit 3, Mich.

118. Rack Trucks
Information on rack trucks for transporting parts and for use in batch-type baking ovens. Wilder Mfg. Co., Inc., Dept. H, Mechanic St. & Erie R.R., Port Jervis, N. Y.

119. Cold Cleaning Solvent
A 16-page bulletin discusses advantages and uses of Chlorothene, an inhibited chlorinated solvent. Includes list of typical applications, table of specifications and properties. Dow Chemical Co., Dept. PF, Midland, Mich.

120. Chemical Treatment of Metals
Informative booklet entitled "ACP Guide to the Chemical Treatment of Metals" has tables that show what type of compound to use for each application, the coating produced, method of application, time required, coating weight, and other useful data. American Chemical Paint Co., Ambler 14, Pa.

121. Abrasive Belt Sander
Folder describes and illustrates Model SPL abrasive belt sanding machine. Includes drawings and diagrams that illustrate advantageous features of this machine. Timesaver Sanders, P. O. Box 7446, Robbinsdale Sta., Minneapolis 22, Minn.

122. Rectifiers
Industrial Rectifier Bulletin IR-1 describes d.c. power supplies, including selenium, germanium and silicon models. Rapid Electric Co., 2877 Middletown Rd., Bronx 61, N. Y.

123. Tumbling Compounds
An eight-page booklet tells how to use Lakeseal Tumbling Compounds so as to get the best results. Includes information on water conditioning, lubrication, sudsing, suspension, scale removal, cleaning, and rinsing. Finger Lakes Chemical Co., Inc., Etna, N. Y.

124. Filtration for the Plating Industry
Bulletin EP-100 describes operation and cleaning of company's plating solution filters; describes construction features; discusses operating cycles. Industrial Filter & Pump Mfg. Co., 5904 Ogden Ave., Chicago 50, Ill.

125. Viscosity Measurement
An operating manual for Brookfield Viscometers. Manual VIM 57 includes diagrams and illustrations to show how viscometer works and how to calibrate the instrument. Brookfield Engineering Laboratories, Inc., Stoughton, Mass.

126. Polishing and Buffing Compositions
Information on a broad line of polishing and buffing compositions, including stainless steel compositions, grease sticks, burring compounds, chrome coloring compositions, many others. Buckingham Products Co., 14100 Fullerton Ave., Detroit 27, Mich.

127. Handling Drums
Catalog pages describe Morse Barrel Lift, Model 80, for raising, transporting, rotating, tilting and draining a fully loaded 55-gallon drum. Morse Mfg. Co., Inc., 765 W. Manlius St., East Syracuse, N. Y.

128. High-Vacuum Gages
Bulletin 9-1 gives complete data on various types of vacuum gages. Consolidated Electrodynamics Corp., Rochester Div., Rochester 3, N. Y.

129. Paper on Industrial Gold Plating
An eight-page paper on industrial gold plating. Sel-Rex Corp., Dept. PF, Nutley 10, N. J.

130. Corrosion-Resistant Coatings
Folder describes Koropon Finishes, a series of primers and enamels engineered to combat corrosion effectively in applications where corrosives are present, such as salt air and industrial atmospheres. DeSoto Paint & Varnish Co., Garland, Texas.

131. Degreaser Cooling Control
Bulletin 650 describes a temperature control, type T44, used to control the temperature of cooling water in the water jacket of a degreaser. Sarco Company, Inc., 635 Madison Ave., New York 22, N. Y.

132. Automatic Barrel Processing
A 14-page bulletin discusses automatic barrel processing for plating, cleaning, washing, phosphatizing, stripping and other immersion applications. Includes 189 photos of parts that have been plated in Stevens Automatic Barrel Machines. Frederic B. Stevens, Inc., 1800 Eighteenth St., Detroit 16, Mich.

133. Phosphatizing Large Parts
Report B-6624 describes phosphatizing of parts too large for tank or spray machine. It tells how Cryscoat solutions, applied through steam guns, simultaneously clean and coat the metal with a fine phosphate film that protects against under-surface corrosion on painted surfaces. Includes data on solution concentration and application details. Oakite Products, Inc., 20 Rector St., New York 6, N. Y.

134. Emulsion Cleaner
Data sheet describes Emulsion Cleaner No. 26, a general utility cleaner that cuts cleaning time when used prior to an alkaline cleaner. Mitchell-Bradford Chemical Co., Wampus Lane, Milford, Conn.

135. Deburring/Radiusing Machine
An eight-page booklet describes the Morrisflex automatic gear deburring and radiusing machine. Includes list of applications, and illustrations of typical parts being processed on this machine. Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich.

136. Painting Equipment
Booklet entitled "Wherever You Go . . ." tells some of the many interesting and unusual applications for DeVilbiss equipment throughout the world. DeVilbiss Co., Dept. 331-A, Toledo 1, Ohio.

137. Airless Spray
Booklet on airless spray includes general discussion of the process, how it works, where it is being used, answers to typical questions. Nordson Corp., Amherst, Ohio.

138. Automatic Plating Machine
Facts about the H-VW-M Dial-A-Cycle anodizing and electroplating machine, which is said to be useful where many different types of finishing operations must be performed. Hanson-Van Winkle-Munning Co., Matawan, N. J.

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139. Oxidized Finishes
Data sheet tells how Liquid Sulphur can be used to produce oxidized finishes on copper, silver, brass, bronze, other metals. Includes specific directions for producing various results. Sulphur Products Co., Inc., McKeon Bldg., 621 W. Pittsburgh St., Greensburg, Pa.

140. Airless Spray
Data sheet describes Model 600 APE-HA HydroAirless spray painting system, a paint application method wherein the paint is atomized by heat and high pressure rather than compressed air. Spee-Flo Manufacturing Corp., 720 Polk Ave., Houston 2, Texas.

141. Automated Degreaser
Folder describes new Detrex rotary drum degreaser. Discusses cleaning cycle, solvent cycle, mechanical features. Detrex Chemical Industries, Inc., Box 501, Dept. A-802, Detroit 32, Mich.

142. Spray Phosphatizing
Data folder describes Divobond, a material that cleans and phosphatizes metals in one operation. The Diversey Corp., 1820 Roscoe St., Chicago 13, Ill.

143. Barrel Finishing Handbook
A 52-page handbook on barrel finishing tells how to get best results on various shapes. Almco Div., Queen Stove Wks., Inc., 812 Marshall St., Albert Lea, Minn.

144. Vapor Degreasing Booklet
Informative booklet tells how vapor degreasing works, shows types of equipment, points out advantages. Electrochemicals Dept., Dept. PF, E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

145. Immersion Heaters
Bulletin describes various types of sheathed quartz immersion heaters. Glo-Quartz Electric Heater Co., Inc., Willoughby, Ohio.

146. Metal Finishing Chemicals
A 16-page booklet lists many of the chemicals available from Harshaw. The Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio.

147. Tricks of the Trade
Leaflet entitled "Tanks Full of Experience" tells how to learn tricks of the plating trade by a correspondence course. Joseph B. Kushner Electroplating School, 115 Broad St., Stroudsburg, Pa.

148. Automatic Plater
Brochure describes Cycleflex, a fully automatic plating and anodizing machine that can be operated by one man. Lasalco, Inc., 2820 LaSalle St., St. Louis 4, Mo.

149. Buffs
Data on air-cooled Ventex buffs, with permanent or removable centers. Bison Corp., 1935 Allen Ave., S.E., Canton, Ohio.

150. Copper Specifications
Publication B-34, "Copper and Copper Alloy Specifications Index," is divided into three parts: Section I is a list of the most commonly used alloys and products of the American Brass Co., together with the applicable specifications of eight agencies; Section II lists specifications in numerical order, with a brief description of the material as to alloy, grade, type, temper, anneal, etc.; Section III tabulates chemical compositions of all Anaconda metals covered by standard specifications. American Brass Co., Dept. RS, Waterbury 20, Conn.

151. Cleaning Copper and Brass
Bulletin No. 86 describes process for cleaning rolled or drawn brass and copper with ammonium persulfate. This procedure removes oxide stains, leaves a clean metal surface that will not tarnish for about two weeks, gives a slight etch. Becco Chemical Div., Food Machinery and Chemical Corp., Buffalo 7, N. Y.

152. Washing Machine
Bulletin describes various sizes of Turbo-Blast cleaning machines. Illustrations explain the controlled flow method of agitation for mechanical cleaning. Storm-Vulcan, Inc., 2225 Burbank St., Dallas, Texas.

153. Abrasive Wet Blasting Machine
Information on Clemco wet hone machines. Folder describes and illustrates various models, discusses uses, advantages of wet honing. Clementina, Ltd., 2277 Jerrold Ave., San Francisco 24, Calif.

154. Brass Additive
Information on an additive for brass plating solutions that is said to increase efficiency and throwing power. Jelco Finishing Equipment Corp., 153 E. 26th St., New York 10, N. Y.

155. Hard Bright Gold
Detailed information on hard bright gold is presented in a new brochure. Specifically, data are given on Technic HG Gold. The electrodeposit produced by Technic HG Gold is described as bright and smooth-grained. Diamond point hardness of the deposit is between 130 and 150, with a karat fineness exceeding 23. Technic, Inc., 39 Snow Street, Providence, R. I.

156. Plastic Equipment
Bulletin describes company s line of laminated fiberglass tanks, crocks, ducts, exhaust hoods, fume scrubbers and chemical process equipment. Schori Process Div., Ferro-Co. Corp., 5935 - 54th St., Maspeth, L. I., N. Y.

157. Thickness Gage
Bulletin GEA-6458 describes design features and typical applications for the General Electric Permanent Magnet Thickness Gage. General Electric Co., Schenectady, N. Y.

158. Finishing Stainless Steel
Discussion of grinding, sanding, polishing, wicking, buffing and other surface finishing operations for stainless steel includes specific recommendations for obtaining the best results in the most efficient manner. R. G. Haskins Co., 2651 W. Harrison St., Chicago 12, Ill.

159. Roller Coater
Bulletin describes bench-type roller coater, useful as laboratory coater, silk screen printer and in pilot plant use. L. R. Wallace & Co., 191 N. Pasadena Ave., Pasadena, Calif.

160. Plating and Processing Equipment
Bulletin 856 describes and illustrates complete line of automatic plating and processing machines. Includes discussion of continuous barrel plating. The Meaker Co., 1629 S. 55th Ave., Chicago 50, Ill.

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52. How Much Compound?
Data sheet tells about the DuBois Econometer, an electrical instrument that tells whether the concentration of cleaning compound in a tank is high or low. Can be used for spray booth water, cleaning tanks, spray washers. DuBois Co., Inc., 1120 W. Front St., Cincinnati 3, Ohio.

53. Dust-Collecting Equipment
Catalog LB-853 describes and illustrates dust collectors, ventilating systems, exhaust hoods, and make-up air units. Colonial Blower Co., 54 Lewis St., Plainville, Conn.

54. Plating Barrels
Catalog covers all sizes from portable units to full automatics. Includes double oscillating, variable-speed, belt and gear-driven models. Also describes rinse tanks and transfer units. Belke Manufacturing Co., 947 N. Cicero Ave., Chicago 51, Ill.

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